

Galaxy

OCTOBER 1969

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Galaxy

MAGAZINE

OCT 1969

SCIENCE FICTION

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TRULY HUMAN

Damon Knight

GOD OF COOL

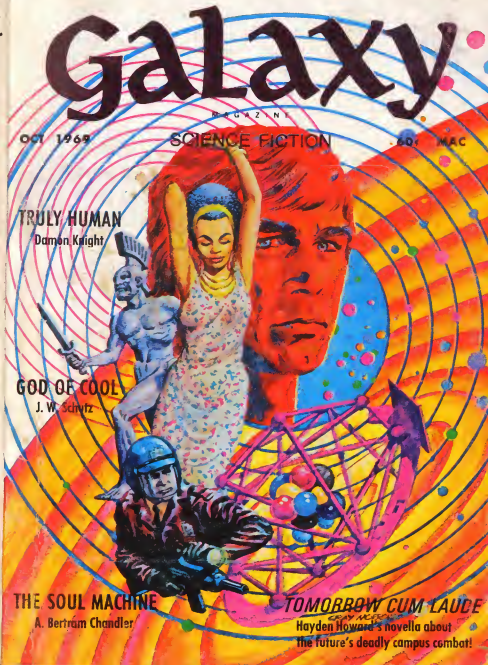
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OCTOBER 1969

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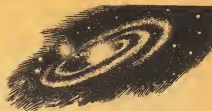
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Cover by MORROW from TOMORROW CUM LAUDE



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WHAT HAPPENED ON 18 DECEMBER 1955?

FREDERIK POHL

WE'VE MENTIONED before in these pages the hundreds of hunks of hardware in orbit around Earth. Artificial satellites. Boosters. Pieces and bits that became detached from same. The debris resulting when unexpended fuel exploded or was made to explode. A few years ago we visited the headquarters of the international Sky Watch at the Harvard-Smithsonian Astrophysical Observatory in Cambridge, Mass., and watched the computers chugging out the orbital courses of all those space objects. It was an impressive sight, a lot like observing the occupants of a nursery school all diligently adding 2 to 2 to get 4. One did not feel that anything very exciting would come of it, although, to be sure, it was something that obviously ought to be done....

Something rather interesting has come of it now.

Consider the observations of that particular celestial chunk

called Explorer 26. Like all the others, it was watched carefully and the parameters of its orbit noted. *Inclination to the equator*: a little over 19.9 degrees. *Apogee*: about 26,060 kilometers. *Perigee*: about 260 kilometers. Until December, 1965. (That's nineteen sixty-five. We haven't come to nineteen fifty-five yet.)

All of a sudden, in that December, the parameters changed. The orbit flattened, the apogee shrank, the perigee expanded. Not much. The change in the inclination was less than a tenth of a degree. At its farthest, the satellite reached less than a hundred kilometers closer than it had before (out of better than 26,000 kilometers); at its closest, it approached Earth to a point only 40 kilometers farther away than before.

But all three changes happened at once—changes in apogee, perigee and inclination. Moreover, similar changes were observed, at other times, in the orbits of other satellites.

Now, what does that suggest?

Well, for one thing it might indicate an application of the kind of reasoning that led Leverrier in 1846, and Lowell early in this century, to suspect the existence of the planets we now call Neptune and Pluto. If a body in a regular orbit is deflected out of

that orbit, there has to be a reason. If you can't find any other reason, you start looking for some body in orbit whose gravitational pull may have done the job. And if you have enough observations to work on, and the time and patience to do the work, you can calculate where that body ought to be and even get some rough idea of its orbit and mass.

John Bagby of Hughes Aircraft thought along those lines. Writing in the spaceflight journal, *Icarus*, he described what happened next. There are about 150 cases of changes in satellite orbits; unfortunately no one "undiscovered" body can account for all of them, but if you assume that perhaps ten such bodies exist, you can pretty well fit all the data.

The next job was to look for the bodies.

Last year a through photographic search was made. Two such bodies did turn up on the plates,—right where the data promised they would be.

So it would seem from the evidence that there are satellites of Earth other than the Moon or the ones we humans put aloft.

But that's not the end of the story.

Once you know the elements of a body's orbit, you can of course predict its future or trace its past. Tracing the past of the orbits of the newly discovered bodies show-

ed something most interesting, indeed. Their orbits intersected. On December 18, 1955, they had all been in the same place.

Fine. What happened on December 18, 1955?

What it looks like is that there was a much larger body which divided into ten or so smaller ones.

The presently discovered satellites are not very big; they run around a hundred feet in diameter. The parent satellite which broke up to produce them would of course have been larger—perhaps a little over 200 feet in diameter if all the bodies were spheres, even grossly imperfect spheres.

It is more than a century since Roche showed mathematically that any natural satellite approaching too close its planet would break up. That's what is called "Roche's limit." It accounts for the rings of Saturn. You can view the phenomenon either way, depending on which theory of planet formation you like: either a large natural satellite breaks up to produce rings, or the little chunks of debris that fall together to produce large natural satellites are prevented from doing so. Either way, within Roche's limit natural satellites, if above a certain size, cannot exist.

(Please turn to page 77)



National Emergency had
been declared. The campuses
were quiet—and deadly . . .

TOMORROW CUM

*From a far place and long ago, and broken,
I have come at last to another Troy.
But still I am, and Troy lives once again.*

One of three inscriptions below a
broken column reerected at the
University of Southern California



LAUDE

By Hayden Howard

CREEPING from the congested traffic on the Hollywood Freeway, Kendy's bus crawled along the Harbor Freeway through the sunshine-tinted smog and finally inched down an off-ramp. On Exposition Boulevard he blinked at the ancient Coliseum, still surrounded by barbed wire. Everything south was in Nairobi.

He walked north. The National Guardsman at the entry gate to the University merely glanced at his thick plastic preregistration card and motioned him on

without searching his suitcase. Kendy's smile relaxed. Infiltrating U.S.C. seemed so easy.

Sometimes his world seemed like a satire and he looked around cautiously. Mr. Smith had told him there were fewer National Guardsmen here than at other universities this size.

All you have to do is blend with the freshmen. Never let them know you're from National University. Simply penetrate security. Photograph the centrifuge. Then enjoy the rest of the semester. Learn to get along with strangers. Who knows? You're young. Maybe during your lifetime—maybe you'll be the one chosen to meet those galactic beepers face to face. Assuming they have faces...

Kendy squinted in the afternoon sunlight.

His cheeks burned faintly as he strode along University Boulevard, an impressive pedestrian mall through the campus. The pavement seemed to vibrate under his feet. The low hedge along its center strip failed to conceal green-painted ventilators shaped like duncecaps. He guessed they led down into the building he sought.

Mr. Smith had said the Congressional Research and Development Building extended beneath University Boulevard for five blocks—a horizontally buried skyscraper. Kendy wondered what was so important about its biochemical centrifuge.

Don't get caught. They'll stuff

you and mount you in Heritage Hall. If they catch you, you flunk. If you get a few pics of the centrifuge—mail them quick. You pass. U.S.C. will have flunked the test. They will have let their security be violated. We want to get the captain of their Campus National Guard replaced by a younger and more forceful officer. You will have done your job. You can relax, enjoy your Federal Premarital Subsidy. That's what you wanted isn't it?

Not quite...

Kendy walked faster, feeling more nervous than excited. He tried to imagine what she would be like. He supposed a compatibility computer would not make a bad mistake. But he had learned how devious Mr. Smith was.

If you get restless after you've photographed the centrifuge and played house—rub on some Passblack and visit Nairobi...

To do so seemed a stupid way to get mobbed or arrested. To infiltrate Russia might be easier. Kendy wondered what kind of education Mr. Smith had been trying to give him. He had learned Russian, not Swahili, at National U. The world was confusing. But at least he was almost free.

AT THE busy intersection of University Boulevard with Childs Way he peered down into the subwaylike entrance to the Congressional Research and De-

velopment Building. Through a glass door he could see a Guardsman seated at a metal desk. On its side was stenciled: **SHOW YOUR F PASS.** Apparently Mr. Smith expected him to figure out how to get past the door guard.

But not today.

He turned away. At the opposite corner of the intersection stood Tommy Trojan. Up there on his stone pedestal the bronze warrior was clutching his shield and sword. Kendy felt confronted for an instant—but he noticed Tommy was glaring past him. The statue seemed to be looking across University Boulevard toward Campus National Guard Headquarters.

The low, concrete-block building crouched on the lawn in front of the ornate old Doheny Library. Like an invader? Kendy knew conflicting feelings. He could see the clash of architectural styles between the headquarters and other campus structures. But he had been taught that the Guardsmen were here to defend the university.

He walked toward their community relations car and smiled with curiosity. Three corroded nozzles protruded from its turret. He wondered what aerosols they had squirted during the first years of the Emergency. With his thumbnail he scraped corrosion from the metal louvers that protected its radiator.

Nine—no, ten years had passed since the National Emer-

gency began. He had been only seven. Now it was difficult for him to imagine what the country had been like before his father was—he winced and stopped that thought.

He was not sure how he felt toward the permanent campus National Guard. There were no Guardsmen at National—the only university without them. The place had been designed and sociologically structured after the National Emergency had been declared.

He touched a sun-aged tire of the armored car. Obviously these Guardsmen no longer drove it much. He had never seen one of these old armored cars in action or even on newscasts. It was as if they did not exist.

Yesterday he had been shown a huge new rocket. It gleamed impressively in his television screen. Some day it would blast off for Mars. Our ship.

The Russians were strange, he thought. After their landing on Phobos, Mars' inner moon, they had retreated. They were searching our Moon like madmen. They had found something and had inflated a dome over it. And they were sabotaging radio-telescopes all over the world. They seemed afraid someone would be able to translate the space beeps—and even more afraid that someone would succeed in answering the beepers.

Kendy considered his universe confusing. This old armored car seemed almost prehistoric. But



it was here, where he was. And on its tire some student troublemaker had chalked the enigmatic word: HORSE.

Kendy blinked.

Most of these Trojans didn't seem to notice the National Guardsmen or him. He watched an amorous couple amble past as he once more lifted his suitcase. With a nervous smile of expectation he strode along Childs Way, looking for his assigned dorm tower.

He supposed Federal Premarital and Marital Subsidies were intended to keep the students interested in each other instead of politics.

He saw a Guardsman walking toward him, carrying a police-type shotgun by its top handle. Even though he had a minicamera concealed in his suitcase, he felt at ease and smiled. The stubby shotgun made him feel at home. He had trained with one in the armory at National University, had learned how to disassemble one in the dark.

He had felt revulsion and excitement. The weapon was a cutie. It was only twenty-seven inches long because its eighteen-inch barrel and receiver extended through the stock to within a few inches of the butt plate. He remembered its many skull-rattling blasts, its twelve-gauge shotgun shells exploding so close to his cheek.

Power.

Although he knew it had been manufactured for police forces

since before the Emergency, it looked weirdly futuristic to him. The plastic bulge above the barrel—in front of the carrying handle—contained a focusable flashlight.

At night this Guardsman could aim its beam of light and the pattern of buckshot would exactly fill the bright circle—*bam, bam, bam*. Kendy thought it more than adequate for silencing noisy students.

He grinned and shrugged. Mr. Smith had told him that U.S.C. enjoyed more permissive freedom than most universities. Perhaps this was because it had been a private school before the Declaration of National Emergency. Guardsmen had indiscriminately occupied all universities in order to protect the government's investment in research facilities when the Emergency began. And ten years later the Guardsmen were still here.

WHEN he crossed Hoover—the street, not the boulevard—he was astonished to see a Black Man. A plastic-green pass was pinned on his white coveralls. Kendy blinked. That was an *F* on the pass. The Black Man walked unchallenged into a building. The door guard never even glanced at him.

Before Kendy could get over that shock he saw a second Black Man. This one wore a gray flannel suit and carried a book. Kendy felt off balance and not from the weight of his suitcase. There

hadn't been a single Black at National University. As several more walked by he felt more—uncomfortable. He wondered what they were thinking. He supposed they returned each night to Nairobi-Watts.

Here came one in a flamboyant robe. Kendy looked away. He was having disturbingly happy recollections of playing with children who must have been Negroes. Of course, that had been before the National Emergency.

Three more strolled toward him. One of them was a girl. He realized his reaction was naive, perhaps laughable. He was feeling uneasy, yet fascinated. Naturally their clothing looked strange to him. His teevee could not receive the Black Channels and suddenly he felt as if he were the one who had been isolated. And he was afraid. He felt as strange as if he and they were from different planets. He did not know what to believe about recent U.S. history.

He crossed McClintock Avenue and saw his dorm tower—Premarital A-2. He hoped he would be able to adjust to all this pre-Emergency type confusion and freedom at U.S.C.

Nervously he took out his pre-registration card and approached the portcullis of the concrete dorm.

He shoved his card into the slot. The iron door clicked open. As he entered the hallway he heard the door close behind him.

SEPTEMBER, and the mad, wild beauty of the St. LouisCon is over (but won't be actually by the time you read this). Never mind. Traditionally, in publishing, September is a good reading month. Summer doldrums are over, the kids are back in school, everyone is thinking in a serious-minded way about the long, hard, intellectual winter ahead. So September is a big, big publishing month.

WE are celebrating it with George MacDonald's very kooky Kafkaesque fantasy *LILITH*. What is almost as extraordinary as the novel itself is the idea that anything as modern as this was written back in the 1890's by a Scottish (sometime) minister of advanced years. You'll recognize it by the superb Gervasio cover of a man in an attic.

AND in September, s.f.'s major novel of the year—*STAND ON ZANZIBAR*, by John Brunner. Not an easy book to read (clearly a bit beyond those mainstream reviewers). This is a jagged, fractionated, panoramic view of overpopulated times to come—the style itself expressive of the explosive tensions generated by too goddamned many people. The theme is well known to all of us. The handling is very special in-

"This one, I thought."

He felt his cheeks burning as he took a backward step, wondering how she had managed to get into the wrong room.

"That old computer must have made a mistake on your card," she said. "I guess we both can see that I'm expecting somebody else!"

"Yeah, I'm sorry. I thought this was my room."

"Give me your card and I'll find out what your room number should be." Rising, with her hair frothy-black and silver-sequined in a towering natural that made her seem as tall as he was, she reached for his card with slender fingers. "*Bahati—ema*," the girl sighed, poking his card into the administrative slot in the wall. She altered her soft voice to the distinct comput speak accent the system could understand and asked for his room number. "Photofaxed, please."

She turned her head. Her hair seemed to float like a weightless crown. Shyly Kendy smiled because he was fascinated. She seemed so different from Helen, the only girl with whom he had ever made love.

The photofaxer extended its paper tongue. The Black frowned. Kendy felt embarrassed. On the white paper, printed below his Birth Security Number was this room number, 943.

"I'm sorry," she murmured. "I didn't realize I'd—wait a minute."

She inserted her own card in

He stood in front of the ADMINISTRATION BOX, confronted the IDENTIFICATION LENS. He saw his own reflection.

Something buzzed. He supposed he had better hurry and insert his plastic card into the REGISTRATION SLOT. This stopped the buzzing. He heard a clank and hoped all his preregistration forms—which Mr. Smith had mailed from a counterfeit prep school—were properly recorded. He had thought they were. U.S.C. had mailed back this preregistration card to his nearest National Guard Headquarters, so everything should be all right.

He heard a rattling sound. A brass key slid out. He grabbed it, expecting to find his room number assignment on one side or the other. The key was blank. Perhaps the room keys were not numbered as a security measure. A lost key was less a liability that way.

The box buzzed and disgorged his card. As his fingers closed on it he saw it had been altered. The letters PRE, formerly imbedded in its semiliquid core, had been dispersed, leaving him with a completed REGISTRATION CARD. He locked its chain around his neck and peered through its integral lens into its plastic depths, hunting for his room assignment.

He saw his thumbprint still sparkling inside the card. Its whorls were shaped from metal-

lic dust. Within a flattened universe of glittering specks his facial galaxy grinned at him. Above it shimmered the flecks of gallium arsenide in which his falsified academic records had been recorded. Although he had spent last year as a freshman at National University, this card innocently showed he had been a senior at a prep school which did not exist.

He watched the metalized helixes of his more basic information quivering. Below them was a new array of microscopic glitter arranged into words and he smiled. It was his class schedule. All three courses had been confirmed. Stiffening with excitement, he found the number 943 gleaming in the room space. His room was on the ninth floor of Premarital Dorm A-2. Room Number 943.

FEELING both horny and frightened, he lurched across the entry hall to the bank of elevators and pressed the button for the ninth floor. Up there in the smoothly carpeted hallway, with admirable cool, he ambled to his assigned room. He smoothed back his blond hair. Taking a last deep breath, he thrust his key into the lock, twisted it. The door popped open.

At her dressing table, the girl turned around with a startled smile.

"What room are you looking for?" she asked, standing up for an audible swish of her black-and-gold *malkia* robe.

deed. Stay with it for 30 pages and you'll be hooked for another 600.

THIS month also—O happy month—Larry Niven's volume of short stories which we titled *THE SHAPE OF SPACE*. Because it occurred to us that of all the new young writers, Larry's worlds are probably the most ingeniously specific. The shape of his particular space is very definite, very much his own. Thank whatever gods there may be that he is also a very good writer, so we can all enjoy.

SEPTEMBER is *TOLKIEN* month too—a promotion yet—although he is our candidate for the author than whom no one needs promotion less; and a peculiar wisp of a book titled *THE BEGATTING OF A PRESIDENT*. It's very in to be anti-Nixon. Not that we're terribly concerned about being in. (We're rational, that's all).

FOR those who've been pleading, Burgess' *A CLOCKWORK ORANGE* is again available (now it comes at .95 though), plus a couple of non-fiction works pertinent to Brunner's theme—*THE FRAIL OCEAN* by Wesley Marx and *MOMENT IN THE SUN* by Leona and Robert Rienow.

UNTIL NEXT MONTH—Enjoy your planet while you can. BB.

the communications slot and asked the same question about herself. The paper tongue extended a little farther, revealing the same room number.

"That's impossible." She laughed angrily. "Listen, you—machine. My first name happens to be Amani. Amani Johnson. Try again. What's my room number?"

The system kept repeating 943. It would not admit error. Neither would she.

"One of us is in the wrong room."

Kendy lifted his suitcase.

"Sorry to bother you," he muttered and backed into the empty hall.

"Maybe you're supposed to be in another tower," she called. "I'm going to phone my *rafiki*. She's a sophomore. She'll know how to find out what room you're really assigned to. You wait in the rec room. It's at the end of the hall."

He glanced at the elevator as he retreated along the hall. Attention was what he did not want to attract. His falsified records had been accepted by the computer. To be questioned now by a live administrator was something he wanted to avoid. He could hear Amani's suddenly plaintive voice addressing the phone. He hoped the wires were not being monitored.

He stared through the west window of the rec room at the fiery glare of sunset behind the silhouetted buildings. It made

him think of a terrifying night he had known as a small boy. He looked down. He did not see many students in the gloom on Childs Way. He supposed most freshmen would not move in until Sunday night—or Monday, when classes would begin.

Maybe he should hide in an empty room until then. He was sweating. He felt unsure—he was not yet used to feeling like a spy.

Every time he heard the elevator stop at this floor he was afraid it was delivering a Guardsman. If they searched his suitcase, they'd never let him out of the Detention Camp. Feeling paranoid, he hurried toward the elevator.

He heard voices from Amani's room, a giggling voice and an angry voice. The angry voice was hers. He scowled and raised his knuckles to knock but changed his mind. The door opened anyway.

HE LOOKED past the girl standing in the doorway. Amani glared at him from across the room.

"Ooh, he is," the other girl giggled. She was much lighter complexioned than Amani and very pretty, Kendy thought. Her hair had been straightened into limp bangs and there was nothing Nairobi about her pants-suit.

"Kivaluana-eupe—"

She giggled toward Amani and her hand covered her mouth. She slid past him into the hall,

her eyebrows rising as if she were properly horrified. Her giggles reached him from the elevator.

He felt like a fool.

"Either come in or go out," Amani said. "I'm leaving."

"I didn't mean to—"

"You're not. I'm coming back on Monday to tell those administrators to fix it. Someone didn't tell the computer. Charlene says he's transferred to Cal Tech. He didn't even have the decency to tell me. Anyway there's something wrong with their computer."

He, Kendy thought. Apparently she had expected to be matched with her own Main Man, as if it were prearranged. For an instant Kendy wondered if Mr. Smith had mixed things up, rearranged room assignments. But he was unable to understand why.

"I'm sorry."

"Not your fault," she said, folding a flamboyant robe and laying it in her opened suitcase.

"I'm going home."

"Nairobi?"

"Where do you think I live? Beverly Hills?"

"It's already after five o'clock," Kendy blurted.

"If you think I'm worried about getting home through a little old border curfew—you're right. But I'm going home."

Kendy picked up his suitcase. "No, you're not. I'm going to find another room."

He descended to the ground floor, scowling.

His suitcase felt as heavy as if

it were full of pre-Emergency bricks. The dorm cafeteria was closed and probably would not open before Monday. He could walk back along Childs Way to eat at the Commons. But he needed a place to hide his suitcase and noticed a downward slanting hall.

He reached a basement door in semi-darkness. With an intuitive movement, instinctive with great burglars, he reached up and slid his fingers along the ledge above the door. He found the key.

A basement downstep toppled him forward, sent him staggering through a net of cobwebs. The place had not been used for a long time. The narrow beam of his tiny penlight slashed through a jungle of insulated pipes. In the middle of the concrete floor sat a bulky garbage disposal unit. It resembled a hippopotamus with a lever to open its jaws. It sat on a sewer manhole. Above it, like an arboreal cobra, dangled a thick electric cord. Its three-fanged 220-volt head was not plugged in.

He supposed this dorm had been built soon after the National Emergency began—while there were still a lot of garbage strikes. The disposal looked big enough to swallow a man.

He noticed a sink in the far corner. Above it was an empty light socket. Something moved in front of him like an ectoplasmic flash as he groped forward. He winced. The movement was

his reflection in a dusty mirror. He turned the tap. Water gurgled. He remembered the story about the U.C.L.A. sophomore the Guardsman caught near some leaflets. The authorities had canceled his housing subsidy—and the student had hidden in a campus broom closet for the next three years, graduating with honors.

II

LIFE was not easy. Kendy decided after his first night on that concrete floor. Bleary-eyed, clutching his hip in pain, he wandered around the weekend campus. He was afraid that on Monday—if he went to the administrators to complain about the computer's mismatch—someone would decide to investigate him.

He discovered subversive elements on this campus, as Mr. Smith had warned he would. Unconcealed in a flower bed near the National Guard Building lay a little handmade sign: LAWN ORDER. Kendy tripped when he took a short cut through the hedge in the middle of University Boulevard. His groping hand discovered a nearly invisible fishing leader strung tautly within the hedge. He glanced at the subwaylike entrance to the Congressional Research and Development Building—if he had been running away from there the line would have pitched him headlong. But it had been intended for pursuing Guardsmen. Students would know. Kendy frowned.

He wanted to reconnoiter the building. He had acquired an *F* pass last night in the wooden shed where the maintenance men changed out of their white coveralls. They had left them hanging there, complete with *F* passes. He had reached in, snagged one.

He stood above the C.R.A.D. Building, the pass pinned to his shirt, but lost his nerve and wandered away along the boulevard toward Founders Hall. His lips moving, he stared at one of the three inscriptions on the modern base of the ancient, broken stone column.

*Hector and Paris saw me
at Troy.*

*I suffered the wrath
of Agamemnon.*

*And once, as she passed,
Golden Helen*

Brushed me with her sleeve.

His mouth twisted. His own Helen had been pale and dark-haired and was probably still working at National University's biochem lab.

To hell with you . . .

He aimed his sudden rage and frustration at her but it curved back upon himself. He straightened, walked back to the entrance of the C.R.A.D. Building and down its iron steps. He pushed aside the glass door, caught a stale odor of cigar smoke.

The Guardsman did not bother to look out from behind his newspaper.

His voice drawled, "Hold it.

Building's closed. This is Saturday."

"I forgot a book."

"Building's closed on weekends and at night."

"I was sent to get an important book."

"Building's closed unless you have a one-shot weekend pass from the Captain. Even then it's closed to you, kid."

The Guardsman made the last word sound like an insult. Janitors along the hall were shouting above the roar of a floor polishing machine and Kendy raised his voice.

"I have an *F* pass. And I need that book."

"The building's closed."

Wispy smoke writhed above the newspaper. Kendy suspected that cigar smokers were even more stubborn than the surviving cigarette smokers.

"Please, sir, if I—"

"You act like this building belongs to you. You Goddamn student—get the hell out of here. And I'll remember you—"

The Guardsman's muffled voice pursued Kendy as he retreated up the iron stairway. He glanced back through the glass door. The Guardsman had tipped back his chair, had propped up both boots on his desk. He took up enough space to block the passage of anyone but an invisible man.

BY MONDAY morning Kendy felt he could barely walk. He had arranged a sleeping pad of crumpled papers and discarded coveralls in the basement but

doubted he could survive a semester of this kind of accommodation. He trudged toward the Administration Building.

In the long line of disgruntled students he saw Amani and dodged out of sight. He had been about to risk applying for another room but now thought better of it. He walked away to his first class, rationalizing that he would have been happy to bunk with her. So let her stand in line all day if she wanted to disturb matters—he could not afford to be investigated.

He was half asleep in class when the live-lecturer's theme—reached the Greeks and Trojans. Surprisingly, the lecturer made the Greeks seem like the bad guys. The concept sounded vaguely subversive. Kendy opened his eyes. The professor was not talking about the *Iliad*. He was talking about two of the lost epics, the *Iliasmikra*—which told what happened following the death of Achilles—and the *Iliupersis*, which described the Fall of Troy. Only brief synopses and a few lines from these books survived. Kendy had to admit to himself that the horse gimmick had been a sneaky trick. It should have been called the Greek Horse. They built it. Ulysses had hatched the murderous plot. Kendy scowled.

Mr. Smith had warned him about this class. Its all-encompassing title was *Civilization*. Instead of teaching something useful like engineering or accounting, this five-unit course still surveyed the

history of Man. Now these old history courses were being modernized.

Kendy scratched under his armpit, remembering that Mr. Smith had told him the Senate's Curriculum Revision Subcommittee had recommended that this controversial course be canceled. But the overburdened Senate Emergency Education Committee had not gotten around to a vote.

Kendy yawned. U.S.C. had a reputation as an old-fashioned school. Although its last president was being detained in the Emergency Camp on San Miguel Island, U.S.C. had stubbornly continued to require its freshmen to enroll in obsolete courses like *Civilization*. He supposed the Coalition Congress would eventually get around to restructuring the entire curriculum. The university would become more like National U., which was the prototype for the future.

His second class was Freshman Biochemistry. He had liked the subject at National U. and expected to get along all right again. He had already worked with a zonal centrifuge—it could change mankind. The centrifuge was barely mentioned here.

His afternoon class was his tutorial. Bleary-eyed, he squinted at the bulletin board, searching for his name. He found it and winced the suspicion. He had been assigned to a Dr. Smyert. The Dr. Smyert? An administrative box unquestioningly issued him another *F* pass because Dr.

Smyert's office was down in the Congressional Research and Development Building.

The coincidence was interesting. Having suffered through the intensive Russian course at National University, Kendy knew what the word *smyert* meant—and more. Dr. Magadan Smyert was the escapee who had been E. Valilov's teacher. Kendy began to feel excitement. Vavilov was the Soviet biochemist cosmonaut who failed to land on Mars. He had stopped on its moon, Phobos, and returned, reportedly in disgrace. Yet old Dr. Smyert was the one who had fled to the United States.

KENDY walked unchallenged past the Guardsman at the door and knew that Mr. Smith had arranged this meeting.

Dr. Smyert peered up at him through rimless glasses.

"Khto?" Who?

Kendy tried out his Ukrainian accent as he identified himself and the haggard man's eyes widened. Dr. Smyert seized Kendy's arm. He began to complain about his treatment here.

Apparently, Dr. Smyert expected him to serve as interpreter, errand boy and ghost writer for dull lesson plans. Dr. Smyert was supposed to be teaching Soviet lab procedures to four non-Russian-speaking undergraduate students. And he despised the task. He considered teaching undergraduates an insult to his past biochemical prowess.

"Pochemu!"

He iterated that his academic field was pure research and clung to Kendy's arm. The door creaked and Dr. Smyert's eyes widened. He whispered that he wished he were already safe at National University. Here security was so weak that anyone could sneak downstairs and murder him.

When Kendy plodded back to his dorm he knew his tutorials with Dr. Smyert would be sheer misery. He had been a little surprised that a Russian escapee would be assigned an office in a restricted building. But maybe there was a reason for everything.

He was heading for his basement hideout when a door banged in the dorm. He flinched. Exhaustion was making him a paranoiac. He wished himself invisible.

No luck.

"Hi," a girl's soft voice said behind him. "I haven't seen you since Friday. I guess you had enough pull to get another room."

"Huh?"

"Are you sick or something?" Amani's voice leaped a little. "They told me to fill out a missing person form. They didn't really listen to me. Like—maybe they're going to take away my room."

"Don't know—"

Wearily he became aware that two more Blacks were standing behind her. The man was scowling at her. The girl was the giggler, Charlene—giggling.

Amani was telling him in sudden anger, "Listen, listen—I stood all morning in that stinky line at their Administration Building.

When I got to the head of the line they told me that if their computer matched us for the same room then that's how it was going to be. If I didn't like it I could drop out because there's a long waiting list. They don't want to understand."

Kendy was so tired he had difficulty following her words. The whole conversation began to seem disjointed to him.

"Who?"
"How'd you," Amani asked, "get your new room?"

He said nothing, not wanting to admit where he had been sleeping.

"You'd better," the Black Man stated mysteriously and ominously, "move your trash out of her room."

"He's—" Amani began. She changed course. "His stuff has never been in my room."

The giggler whooped, covering her face.

"I'm talking about his suitcase," Amani said angrily.

The giggler subsided. Her hand dropped, exposing teeth. Straight hair framed her lovely honey-brown face and contrasted with Amani's stormy darkness.

"These are my friends," Amani said sharply to him. "Don is Charlene's roommate."

"The room is Amani's," the slender, conservatively dressed young Black stated, eyeing Kendy as if estimating his height and weight. "I hope you're not thinking of—"

"Don, he hasn't tried to take my room," Amani cut in. "I haven't even seen him since Fri-

day." She laughed with embarrassment as sudden as her earlier anger. "Why don't you two just shake hands and act friendly."

"All I meant was—" Don glanced at Amani as he clamped down on Kendy's hand. "If he—"

"He's got a room," Amani repeated. "He's got a better room assignment. What would he be doing around here if he didn't have a room? Don, stop worrying about his taking my room. He's already shown he's got more influence than we have. He's got a room. Where's your room?"

Kendy opened his mouth.
"What I meant, was," Don interrupted, dropping Kendy's hand and rushing his voice at Amani, "if anyone bothers you, anybody at all, you just remember that Charlene and I are in the dorm across the street. You phone." He stepped closer to Amani. "I'll come."

"We're your friends, honey," Charlene drawled.

"Fine friends," Amani flared at her. "Didn't you hear you-know-who was transferring to Cal Tech? Why didn't you tell me he's left me the only Black Woman in this tower?"

"We hadn't heard," Don protested. "I didn't know till yesterday when Charlene told me."

"Honey, I didn't know," Charlene squeaked. "By the time I knew—I thought those stupid administrators had found someone else for you. I didn't think their machine would make mistakes like this."

She glanced at Kendy and again her fingers screened her face. She giggled.

Abruptly Amani turned her back to both of them.

"Amani," Don was pleading. "I don't believe in giving advice to people. But you know the administrators won't let you keep that whole room for yourself. Everybody else in your dorm's already matched by now, so they'll just assign any old honk—well, anybody who registers late—to your room, no matter what his compatibility profile is."

"Honey, we think you should go home," Charlene giggled.

"*Tajadhal!*" Amani exclaimed, whirling at her. "Let me run my own life." She scowled at Kendy. "What administrator did you see to get your room assignment changed?"

"Didn't," he muttered. "I been sleeping in the—in a rec room."

Charlene emitted a whoop.

"I don't want any more of your noise," Amani said.

Charlene seized Don's arm.

"Let's go," she said firmly, almost dragging her man out of the building.

"I didn't mean to put you in an embarrassing situation," Kendy muttered to Amani. "I'll go to the administrators if you—"

"I couldn't be any more embarrassed and humiliated than I already am. I don't mean by you—I just feel so angry at everybody." Her voice rose. "Tomorrow you go to the administrators. Where's your suitcase!"

"In the—none of your biz." He laughed groggily. "I been sleeping on a concrete floor."

"What rec room is that?" she asked with suspicion. "The ones I've seen are carpeted. You're putting me on."

"Too sleepy," he muttered. "Can't even lie straight."

"Very funny—but I'm not laughing."

OPENING Room 943, she pointed at the blue line in the checkerboard linoleum. "Over there is your half. We'll straighten out the rest tomorrow morning."

Kendy was feeling happier.

"Little problem tonight. Bathroom's in your half."

"Do tell? Well, I'll give you this square here—and that square—and you can get there in two jumps. What's your major?"

"Don't shoot. I thought it was biochemistry." He sighed, feeling dizzy again. "But that's not why I'm so hung over. Pardon me if I lie down on my bed. I've been sleeping on—"

"A concrete floor? I'll bet? Aren't you going to go look for your suitcase? Or is it pawned?"

"Tell me your major instead."

"Elementary Education with minors in Art and Creative Dance. If you'll excuse me now—I have a date."

"Thanks," he mumbled, his eyes closing again.

When he awoke the room was dark and empty.

He went down to the dorm cafeteria too late and had to hike



along Childs Way to Commons to get anything to eat. Later he wandered around the night campus, procrastinating. He found himself drawn to the Congressional Research and Development Building. At this hour the only ones going down were maintenance men in their white coveralls. All of them seemed to be Black. He wondered why he was so nervous. When he finally went back to the dorm the room was dark.

Amani seemed asleep.

He changed hurriedly—in the bathroom—into his basketball warm-up suit, although at Nation-

al U. he had slept in his jockey shorts. He slipped between the sheets of his bed and became wide awake. Pipes gurgled. Elevators hummed. People laughed in the hall. Doors closed. Toilets flushed. He had to go to the bathroom and was not amused.

III

THE next day, like two porcupines in a cage, they acted as if they were accustomed to each other's presence. He felt conspicuous with her in the cafeteria. But everyone seemed to play it

cool, except the Student Representative of the National Guard, who did a double-take and scurried away to telephone. Amani did not seem to notice. And he began to realize that she was more relaxed and secure within herself than any girl he had known.

"Please pass the *chumvi*," she whispered mischievously and he learned his second word of Swahili, salt. The first word had been Amani. She explained: "I was only eight when I named myself. That's one nice thing about Nairobi. You're free to choose your own name when you have your

eighth birthday. When I was a little girl—right after we were attacked by your National Emergency—I guess all I wanted was peace. So that's what I named myself, peace." Amani smiled, her teeth flashing. "I'm not so peaceful now."

In the afternoon—as he walked toward the entrance to the Congressional Research and Development Building, dreading his next "tutorial" with Dr. Smyert—a lean National Guardsman joined him stride for stride.

"You're Dorm A-two, room nine-four-three-B, aren't you?"

The voice was soft and trying to be pleasant.

Kendy forced a smile.

"That's right."

"I'm Captain of the Guard here." The bony face seemed almost as old and weary as a full-professor's. "I wonder if I might look at your registration card."

"Be my guest."

Kendy watched the other peer into the lens of the card and felt numb.

But the captain smiled in recognition.

"Preempt Prep. Glad to meet you, Ken. My student assistant last semester was from the same school. So you know him."

Was the captain playing games? Mr. Smith had been infiltrating students to U.S.C. for several years. Like Kendy, they had been given counterfeit academic records from that nonexistent prep school. Like Kendy, they were really from National U. They had been sent to test U.S.C.'s security, to test the National Guard.

The captain was chatting cheerfully: "I wondered how you happened to get such an—inappropriate compatibility assignment in Dorm A-two. But I realize it must be a computer error and no reflection on your political background. Errors like this cause unrest. They're what I try to prevent or correct. I'll go with you to Administration and help you get assigned to a different roommate."

"I'm happy with what I've—"

Kendy caught himself. He

shivered—but not from fear. He wanted to hit this bone-faced man.

"Maybe you're right," the captain said thoughtfully. "They do a job on you kids at Preempt Prep. Not doing anything may be safest in this case. If I corrected your roommate assignment now, certain trouble-makers might mistake my motives as prejudice. Maybe there's a reason for the computer error." The captain winked. "At least you'll be in a position to note who her friends and contacts are. So keep in touch with me. And maybe I can help you some time."

Kendy could not speak. His face contorted in a toothy grimace. Evidently the captain thought it a smile. He grinned at Kendy, turned and left.

KENDY was still on the rebound when he reached the C.R.A.D. Building. He tried to keep from exploding at Dr. Smyert. The lonely old Ukrainian kept regurgitating his life story. Kendy managed to last him out and later wandered into the hall.

He prowled until he thought he knew where the ultra-centrifuge was kept. He saw an outer room that contained several humming centrifuges no larger than basketballs inset in washing machines. An inner room was kept locked—faculty members with keys used them, entering and leaving.

The last departing graduate student locked the door of the outer room. But the maintenance

men, arriving with their push-carts and brooms, unlocked all the doors along the hall.

Kendy waited for his chance. He walked into the outer room and noted the make of lock on the inner door. He hurried out, not wanting to be trapped if someone closed the outer door. He met a Guardsman ambling along the hall, shooing the last students out of the building.

"Time to go home. Building's closed."

The next day Kendy tried to stay late. A Guardsman discovered him crouched under Dr. Smyert's desk.

"Don't let me catch you in here after hours again, kid," the Guardsman said, "I should report you to the Captain."

Kendy realized that only Guardsmen and maintenance Blacks enter and leave the building at night.

He bought six locks of the same make as the inner door's. In his basement hideaway he practiced with his little burglar pick and L-shaped tension bar. Inserting the pick, he released the tumbler pins and tried to hold them up with his tension bar. He discovered he needed three hands and more patience.

Late that night Amani teased him as he came in.

"How's your girl friend?"

"You're my only friend."

"Not that kind of friend, whitey-whitey-white boy."

Amani laughed and walked into the bathroom to change for bed.

"Guess what," he called. "Dr. Smyert requisitioned a desk for me today—like I'm a grad student. My own desk. I filled out the form and he signed it. He didn't believe they'd really let him have it. He's always complaining how miserly the administration is. I guess he hates our bureaucrats as much as the ones he ran from."

"Good for him."

"He's a misanthrope."

"What?" She was rustling the shower curtains.

"Picture an old Ukrainian biochemist so bitter he renames himself *smyert*. That's the Russian word for death."

The shower roared, stopped. Amani came out in an immensely concealing housecoat. Her arms darted from huge sleeves and she began to rub her head with a towel.

"Amani, the really important thing about Dr. Smyert is that he knows E. Vavilov. He was Vavilov's teacher."

"Ooh, my hair's wilted. Why don't you invent a waterproof hairspray."

"Don't you ever pay any attention to what's going on in the world? E. Vavilov was trained to become the first biochemist to set foot on Mars. For some reason he decided not to land there."

"Maintaining a natural hairdo can get damned difficult."

"Instead of descending from Phobos in the landing module, Vavilov stayed fussing around on that little moon as if he'd dis-

covered something more important than Mars. Didn't you pay attention to the space coverage?"

"More likely I was taking a dancing lesson or doing something else meaningful to me," Amani laughed. "Seems like all my life teevee has been counting down and blasting off. In Nairobi, at least, we don't waste money that way. But lecture me if it makes you feel superior."

"The telepics showed him crawling around on Phobos in his shiny suit. I suppose you know Phobos is the Greek word for fear. Did I say it's Mars' inner moon? Very small. But it looked enormous. Their little ship attached itself as planned. E. Vavilov was supposed to crawl into the landing module and separate himself and land on Mars—but he didn't. He embarrassed the Soviet P.R. men."

"Am I supposed to ask why?"

"The ship returned to someplace like Engelsistan. E. Vavilov seemed to be in disgrace and was kept incommunicado. His military pilot read from a prepared statement. Officially a minor technical difficulty prevented the Mars landing. But Dr. Smyert thinks they brought something back from Phobos. And lately the Russians have begun frantically searching our Moon. Maybe they've discovered the same thing there?"

"Am I supposed to ask what? All right. An Easter egg?" She laughed. "Or a Chinese cosmonaut?"

"Seriously, Dr. Smyert says he doesn't know what's under the dome they inflated on our Moon. He claims the Party started persecuting him because he was E. Vavilov's teacher. Anyway, Moscow canceled Dr. Smyert's research grant. They demoted him to teaching lab procedures in some Ukrainian technical school. What really bugs him: he was demoted but now they've permitted E. Vavilov to return to the research institute on Lake Baikal." Kendy frowned. "Sometimes I think the real reason they sent Dr. Smyert away from his Lake Baikal institute and took away his grant was because he's gotten old. Sometimes he seems confused. He contradicts himself. The man I'd like to meet is Vavilov. I want to ask him what happened."

"That would be a little difficult," she said. "Russia?"

HARDER than visiting Nairobi?"

"We wouldn't let you through the barricades."

"I've got a bottle of Passblack." He laughed. "I'd only walk in a little way, holding your hand."

"I think you're studying to be either a provocateur or a honk vigilante spy. You? My roommate? Even if our Security Patrol rescued you from a lamppost we'd still hold you for the next prisoner exchange. Nairobi's where you're not going."

"Just trying to learn," he said, "about my country."

"Yours? There's no room for

you in Nairobi," she said, "and for me Nairobi is a cop-out. For me its Nairobiclaustrophobia. I've come out to enjoy the rest of my country."

She sat down in front of her mirror, unwinding the towel from her hair.

"Have you told your mother about me?"

"You kidding? She thinks I'm in an all-girls dorm."

Her gaze dropped and her quick hands laid out a row of straight clamps on her dressing table.

He wanted to say—something.

"My mother was what they used to call—a hippy," he blurted. "So I've tried to be the opposite. What's that big squeeze-bottle of gunk?"

"None of your business."

She opened a drawer. He watched the bending column of her neck. Rising again, the dark cloud of her natural floated high above the bright red collar of her housecoat.

Not only did she persist in concealing herself in that flamboyant tent, he thought with poignancy, she slept in an immense cotton *Kanga* that hid her in a quivering of printed blossoms. He had never had a good tom-peep at her, although her various pink bras, white bras, black bras festooned the drying line over the tub and interfered with his right elbow when he was shaving.

She had beautiful hands, much smaller than his. His first pair of cotton gloves had been too small

for him. He had soaked them in the bathroom and tried to stretch them—they had shrunk instead. Amani had seized them for her own because another weird course she was taking was Woodworking. She would not tell him why. And he could not tell her he had bought the gloves in order not to leave fingerprints in the C.R.A.D. Building.

She always tried to dress in the bathroom. Or she changed inside her *Kanga*. The garment was as voluminous as a mu-mu. Sometimes she would flow out of it in black leotards.

She would stretch and bend sinuously on her side of the room, practicing her dancing. She whirled and leaped when he teased her. She could land without a sound and, without crossing the blue line on the linoleum, tower above him on tiptoes, her hair quivering like a magic bee-swarm.

NOW she fidgeted indecisively at her dressing table. She would never resemble one of those golden ads for Cleopatra suntan lotion, he thought. She looked as she should—like herself. He wanted to say as much and to tell her what he was feeling. But he was afraid she would laugh and reject him. He watched her hand rise to her hair again. Her eyes were looking at him from the mirror and he grinned with embarrassment.

"What," he blurted, "are you doing with all that junk?"

"There are times when a girl needs a little privacy." Her reflection smiled at him. "Hint-hint."

"Okay," he said awkwardly. "I was going out anyway."

He had planned to stay. He had been postponing his attempt to violate the security of the Congressional Research and Development Building. His life had become strangely, exotically beautiful when he was near Amani and he had found himself reluctant to risk being caught and spoiling their relationship. He guessed spies should not fall in love. Maybe the best thing was, to get his task over with. Try to write off Amani's sorcery. He had figured out a way to become an invisible man on this campus.

He went down to his basement, relocated the door behind him and groped to the sink. Reaching up, he turned on his light bulb and blinked into the dusty mirror. He reached under the sink and took out the rolled-up white coveralls.

They drooped on his lanky frame. The janitor who had thrown them away must have been both tall and fat. Kendy was merely tall and nervous.

He rubbed Passblack on his cheeks and saw his identity dissolve in the mirror. He tried a smile, found himself expressing fright. He pulled on new white cotton workgloves, a larger size. The others had been too small. These were too large.

He stuffed a rag into the sagging pocket of his coveralls to hold down his minicamera. He did not

want it bouncing out if he had to run. He looked at the disposal.

He hoped it would be able to grind up his stolen plastic toolbox. The box held an electric repair kit, fuses, pliers, tape, pencil and requisition forms in triplicate. He had decided on the identity of an electrical repairman complete with toolbox and signed work order. Wondering if he had forgotten anything, he pinned the *F* pass on his coveralls.

His worries increased as he walked along Childs Way, brightly illuminated by "emergency" lights. He changed his mind and circled north, finally reaching University Boulevard near Founders Hall. By now he was breathing too hard, beginning to sweat—he could rouse suspicion. He paused beside the broken marble column to calm down.

He kneeled to read the inscription at the base of the column.

*Ye parent gods! who rule
the fate of Troy,
Still dwells the Dardan spirit
in the boy;
When minds, like these, in
striplings thus ye raise;
Yours is the godlike act, be
yours the praise.*

The poem made him feel uncomfortable. The broad buildings loomed around him, thousands of lighted windows glaring from emptied classrooms, awaiting the janitors. He pulled the bill of his janitor's cap lower over his eyes.

The C.R.A.D. Building nearby

breathed warmth up its stairway against his face as if he were entering the jaws of a dragon. He clumped down the iron steps, pushed open the glass door. The stench of dead cigar smoke wrinkled his nose. He glanced toward the desk. The Guardsman there seemed asleep under the newspaper spread like a shroud over his face.

But the newspaper rustled as Kendy walked past the desk. He continued down the hall, ambled past Dr. Smyert's office. He heard the clunk of a wastebasket being emptied. But he saw no one in the hall and managed to slip into the room he had scouted earlier.

He thrust his burglar's pick into the lock of the inner door. His hands were shaking. He dropped the tension bar. It took him nearly fifteen minutes to turn the lock.

The narrow beam from his penlight showed him so little of the inner room at any one time that he was unable to visualize it as a whole. He hoped he would recognize the centrifuge.

IV

HE heard a click ahead of him and switched off the penlight. He stood in darkness, listening, doubting whatever he was doing here.

If he were caught and convicted, Mr. Smith had assured him, he would never land in the Federal Penitentiary. To show that he had been testing security for another government agency would present

no problem. But a revelation of his activities could end his usefulness as an agent.

No further sound came from the darkness around him. He again turned on the penlight, saw disordered shapes and shadows. He found it difficult to orient himself both physically and spiritually. His early indoctrination had become diluted by what he felt for Amani and by exposure to a more multifaceted existence than the one he had known at National University.

Yesterday Amani had needled him about his being white. Whites were insistent on the continuation of the National Emergency. He had argued weakly that the Emergency still was only a temporary measure.

Temporary for you, permanent for us. But you white innocents are prisoners, too . . .

He put her out of his mind and tried to concentrate. The room seemed so cluttered with equipment that he was afraid he would photograph the wrong centrifuge. A row of them gleamed along one wall, one-eyed and silent.

His penlight beam found an imperfectly closed vacuum-seal lid in the floor and under it a round pit. He smiled with excitement. In the pit was a planetoid shape—it had to be the rotor of the centrifuge. It was big. He had never imagined a titanium rotor of this diameter. He did not see how it could endure the centrifugal stress from the rumored hundred and fifty thousand revolutions per

minute. The enclosing pit was probably insurance in case it burst.

He took out his minicamera. It was a hard little world, he thought. Biochemistry had become important to the Defense Department. Necessarily they were trying to overtake the Russians. There were many military applications for biological centrifuges. He adjusted the microflash on the camera, assuring himself that he was a good guy, a counterspy helping to defend his country, his tribe. What he defended might not be perfect but it was his. His life was part of his tribe's. To think otherwise was to consider self-destruction.

Sometimes, in moments of unhappiness, he had daydreamed of taking action to improve his tribe. He would change it from within. But it seemed ready to burst apart. To think of changing it beyond recognition seemed as frightening as lobotomizing himself.

Clumsily his fingers operated the gadgets on his camera. The microflash blinked. He took another picture.

Curiosity overcame him. He dropped into the pit to examine the rotor. It was shaped like a double boiler. He unbolted and raised its upper hemisphere. The hinge creaked.

Instead of being divided into four pie-slice compartments like the zonal rotor he had used in the lab at National University, the interior of this giant was divided into eight sectors. It would whirl

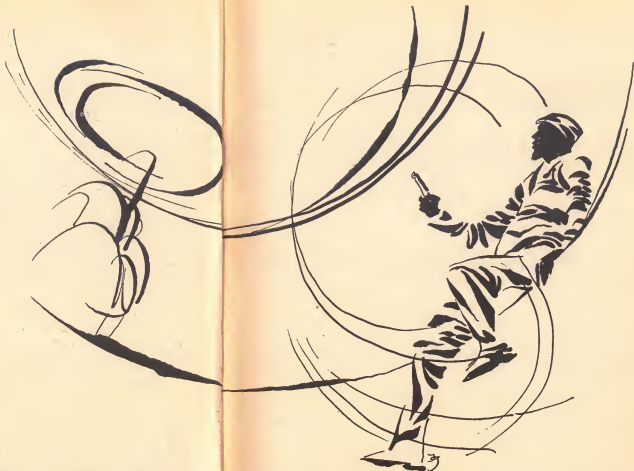
with tremendous centrifugal force. He noticed alternate sectors were designed to remain empty of fluid in order to minimize weight and structural strain. Its very long radius provided a long gradient. The contents of ruptured human cells would be spread a long way

through the sucrose gradient. He supposed the different organic molecules would be separated from each other more effectively in this big rotor.

The laminated edges made him think the metal was not titanium. It seemed to be a composite—per-

haps a metal-epoxy sandwich, light and strong. He guessed its basic technology was another spin-off from jet-engine rotor-compressor research.

He shrugged, feeling slightly disappointed and wondering what all the secrecy was about. He saw



no breakthrough in centrifuge design here. He closed the upper hemisphere. It was simply a big zonal rotor whose outer edge could spin more forcefully. It offered molecular biologists and their mixed-up molecules a little more centrifugal separation.

He locked the inner door behind him, peered down the hall. Distance diminished the Guardsman—he seemed of no consequence. The newspaper was spread like a privacy screen.

Sleep, sleep, sleep.

THE odor of cigars was stale. Dead. The limp newspaper shrouded the face and chest. The boots were propped up on the desk. Their leather soles confronted Kendy. They waggled sleepily, rested their heads together. They made him think of an odd little couple from another planet, alike in shape but mirror images of each other. They waggled again as if soundlessly communicating with each other as he tiptoed past.

“What you stealing, boy?”

Kendy stopped. The glass door ahead seemed so near. He could see that its magnetically-activated bolt was open. The newspaper rustled.

“Boy, why don’t you answer me when I speak to you?”

Kendy swallowed. He imagined the Guardsman’s finger reaching toward the door-locking button on his desk. Kendy forced a foolish grin and held open his hinged plastic toolbox for inspection. Like a loose tooth, a screwdriver

dropped to the floor. He bent to pick it up and more tools spilled from his box. He scrambled to retrieve them, playing the fool, leaving until last the ones which had rolled toward the door. He crawled toward them, clumsily picking them up one by one.

The Man laughed.

With an inward sigh of relief, Kendy snapped his box shut. He rose, one step from the door.

“Where you going, boy?”

Kendy’s feet felt glued down while his body swayed toward the door.

“Come over here, boy. That bulge in your pocket ain’t your snotrag.”

Kendy turned his head. He was frightened and unaccustomed to being addressed in this tone of voice. The man’s face remained concealed behind his newspaper.

“Come here, boy.”

Kendy’s knuckles hardened around the handle of the toolbox. The door still seemed near. He imagined the Guardsman’s yellow-stained finger hovering above the lock button.

“You hear me, boy? Show me what you stole.” The man’s finger would be descending on the button. “You hear me?”

Kendy hurled the toolbox. It hit the newspaper with a solid *thunk*. Both boot soles rose from the desk, up and over as the chair tipped over.

Kendy fled.

He bounded up the stairs and knew he was being pursued. His foot missed the curb. He fell flat

on the pavement and sprang up. As he hurdled the hedge dividing University Boulevard he heard the Guardsman’s voice.

“I’ll shoot—”

Kendy ran. He heard a crash and knew the Guardsman had reached the hedge and tripped over the transparent fishline. A shot came, a yelp of pain. Kendy hunched his shoulders and accelerated. He had not believed anyone would really shoot. He dodged like a rabbit, expecting another bullet and aware that the angry yells behind him were becoming fainter and more distant.

Kendy made a skidding turn past Tommy Trojan and sprinted along Childs Way. He lost his cap. He could hear distant shouts converging as he dashed into his dorm.

Other Guardsmen had taken up the pursuit. He darted through the entry hall, past the mail slot and the elevators. He popped into his basement like a rabbit into its hole.

He collapsed on the concrete floor, tried to listen for Guardsmen’s footsteps. He heard nothing and sighed with relief.

Removing the film cassette from his camera, he sealed it in the prepared mailer.

HE STARED at his dark face in the mirror. It seemed to be accusing him of something. He seized the white bottle, poured neutralizer over wadded cotton. His cheeks stung as he rubbed off the Passblack.

He was amazingly pale. Fishbelly white.

He stepped out of his coveralls, kicked them toward the disposal. He pressed its lever. Its lid opened, revealing rusty teeth. He dropped in his camera, the coveralls, the bottles of Passblack and neutralizer, the stained cotton, the cotton gloves. He twisted the faucet handle. Water roared into the iron hippopotamus. He grabbed the thick wire and plugged it into the disposal’s electric motor.

A grinding, crunching, terrifying sound rose. He thought it might awaken the whole dorm and unplugged the machine. He looked in. The evidence had vanished.

Feeling safer in his own clothing and holding the incriminating film, he walked into the entry hall. A Guardsman approached him. Kendy reached the mail slot, leaned against the wall and unobtrusively inserted the mailer.

He pushed away from the wall and started toward the elevator. The Guardsman followed him, stood waiting silently until the elevator came.

The Guardsman nodded, waited for Kendy to enter.

Kendy pressed the button for his floor. The Guardsman said nothing. When the elevator opened, Kendy let the Guardsman precede him. The latter strode directly to the door of Room 943. Kendy heard Amani’s protesting voice as the Guardsman entered. He glimpsed two others in the corner of the room.

He stood in the elevator, his eyes blurring.

Amani's voice cried, "I tell you I don't have any coveralls."

A Guardsman pulled open a drawer of her dressing table. Another—Kendy recognized the captain—moved to stand between her and the doorway. Kendy stepped carefully out of the elevator.

"We have witnesses," the captain was saying to her. "You're the only Black in this building. All we had to do was look in the registration file downstairs and find your room number. Let me see your card. A Guardsman saw you run into this building."

"Witnesses to what? To what?" Amani cried in outrage.

"You don't match your picture," the captain's voice stated as he peered into her translucent Registration Card. He glanced up at her face. "Trying to disguise yourself?"

"No! Are you crazy?" She seemed somehow shorter, shrunken, and Kendy realized her magnificent natural was gone.

She had plastered her hair down with straighteners and gunk. She had also cut it like Charlene's. Instead of her robe, she was wearing a straight knit dress. Her dark face trembled on the verge of tears. "I just tried to change my hair-do. I'm still the same. What are you talking about?"

"We have the cap," the captain said, holding up the cap Kendy had lost. "You hid your shortened hair in order to look even more like a janitor. This cap fell off

while you were running. See, it fits your head. You're not the first Black girl who—"

Kendy shoved past the captain into the room.

"Let me into my own room."

"I know you." The captain smiled and extended a bony hand. "I just realized this is your room. You've been living with trouble. Without knowing it, I hope."

"Kendy. *Kosa*—mistake!" Then Amani cried, "I didn't do anything." Kendy nodded at the captain.

"That's right. She didn't."

"Do what?" challenged the captain, staring at him.

Kendy smiled nervously. He wished he'd kept his mouth shut.

Amani yelled, backing away from the squatter Guardsman, "Don't you touch me—"

"She hasn't done anything—" Kendy shouted.

"Son, you don't know what she's done," the captain said. "We found her gloves in the bathroom. So we know she tried to sneak into the C.R.A.D. Building. She was wearing gloves then. When we find the coverall part of her disguise, we won't bother you any more."

"She didn't do it," Kendy bleated, almost confessing.

"Those aren't her gloves."

"Then whose are they?"

"Mine."

"See they're too small for your hands. I understand your purpose," the captain said. "You feel you ought to defend your roommate—even though you don't

know what she has done." He rested his hand on Kendy's arm. "You should have a higher loyalty. As I recall, the motto of Preempt Prep is Loyalty—meaning nothing small. Last year when he was my student assistant, Chuck gave me one of your blue-and-gold banners. You must have been a friend of his. I can't believe you're involved in this immoral—business."

"This what?" Amani's voice cried in outrage.

The captain laughed.

"All right. You tell me why you've been sneaking into the C.R.A.D. Building at night."

"I never have—"

The captain glanced from Amani to Kendy. "Do you realize that one of our Guardsmen has been seriously injured?"

Kendy insisted thickly, "She—she didn't do anything."

THE captain said gravely, "I admire your attitude toward a roommate—but you could be starting to obstruct officers of—"

Amani grabbed the phone, yelled, "Help!"

A Guardsman seized her arm. The captain whirled. He extended his fountain pen toward her face. There was a hiss. He turned his helmeted head away. His transparent visor had dropped over his face.

Amani blinked, coughed, gasped for breath.

Kendy yelled wordlessly at the captain and collided with a chair

the captain's foot shoved in front of him.

"It's a harmless gas, medically approved." The captain's free hand opened, fingers spread like a tattered white flag of peace. "Son, if you understood our problems you'd support us in this investigation. The fact she is Black has nothing to—"

"Get out of our room," Kendy wheezed.

It was difficult for him to breathe. All three Guardsmen were masked by visor filters.

"—has nothing to do with this arrest—except that her color helped us to identify her," the captain was saying as if from a great distance. "If you weren't an alumnus of Preempt Prep I might have doubts about you, the way you're interfering here. I could order you detained for interrogation, polygraphic questioning. After ten years in command, I've learned how dangerous it is to trust students."

"You trigot," Kendy gasped in campus jargon, labeling the captain as prejudiced against white students as well as Black. "Listen—I did it!"

"You must be abnormally sensitive to cannibogen gas," the captain murmured. "Don't panic. It will wear off in a few minutes. Step out into the hall. Now breathe deeply. We'll take her to the ambulance so that the wounded Guardsman can identify her."

"I did it," Kendy repeated, following them. Each slow move-

ment of his legs felt a mile long. "I did it—"

He laughed in confusion. "Try to restrain yourself," the captain said disgustedly. "The gas will wear off. You're undergoing a reversal reaction—a harmless side-effect. Try to restrain any irrationally guilty feelings. They won't last."

"But I did do what you're accusing Amani—"

"At the moment you'd confess to anything," the captain laughed. "Fight it." It's merely chemical arousal of your early childhood guilt experiences. It spreads upward in time. Probably by now you're even feeling guilty because Blacks exist. But don't get noisily masochistic or we'll suspect you have liberal tendencies."

"But—I—did—it," Kendy repeated. "I—did—"

"Be quiet," the captain said. "You're disturbing serious students."

Kendy blinked at the concerned faces in the doorway along the hall.

The captain's voice said loudly, "You're both detained. This is a marijuana investigation. Why I can smell it!"

Pale faces vanished from the doorways.

V

THE elevator dropped. Kendy's blurred gaze shifted from the captain's face to Amani's.

She smiled as if intoxicated.

"Want to go home?" she asked.

"I did it," Kendy repeated to the captain, who shrugged and glanced at Amani.

"I believe you." Amani laughed bitterly. "I understand you. I understand too much," she yelled with explosive rage. "I hate, I hate, I hate you!"

She wasn't looking at the captain.

"It will wear off," the captain muttered to Kendy and tried hustling her out of the elevator.

The campus seemed bright with riot lights. The sidewalk was empty except for a Guardsman leaning against the armored car and idly stroking his stubby automatic shotgun. Above him the turret of the armored car aimed its three nozzles and its two open-mouthed but silent loudspeakers toward the dorm. Someone coughed. The turret swiveled suspiciously.

The captain guided Amani to the rear of the ambulance. Her body was swaying. Kendy looked into the ambulance and saw a Guardsman lying on a stretcher. He was clenching a dead cigar between his teeth and looked as if he were suffering more from anger than pain. A bandage around his foot was dark with blood.

"Recognize her?" asked the captain.

"Her?"

The injured Guardsman sat up in surprise.

"You said she was wearing coveralls," the captain reminded him. "And a janitor's cap. Here's

the cap." The captain gingerly placed the white cap on Amani's bent head. "Now you identify her? She was wearing the gloves." "Her?" The Guardsman's eyes widened and his cigar wobbled. "His—her coveralls was too big, baggy, but—"

"Then you do identify her?"

"My foot's killing me," the Guard mumbled evasively, sinking back.

"We'll detain her for a polygraph," the captain stated. "Now that you've made a tentative identification—"

"Are you blind?" Kendy exclaimed, leaning in at the Guardsman. "Look at me. Don't you recognize me?"

The Guardsman glanced from Kendy's face to the captain's.

"I told you it was a Black boy—not a—"

Kendy shouted, "I was wearing Passblack, you bigoted idiot—"

"I'm not all that stupid," the Guardsman retorted, closing his eyes. "At least I can still tell black from white."

"How?" Kendy shouted. "You had a newspaper over your face. You were asleep behind your newspaper when I walked in."

The Guardsman glanced at the captain.

"Look at me," Kendy yelled. "Don't you remember me? Your feet were on your desk. Didn't you even look out from behind your newspaper when you stopped me on the way out?"

The Guardsman sat up straight. He spat out his cigar.

"Sir, I never seen this kid before in my life."

"Look at me," Kendy shouted. "I hit you with my toolbox."

The Guardsman's hand rose to his chest.

"Sir, this kid's lying in order to make me—make us look bad. No one got in past me. She tried to sneak in. I sent her back. I told her to halt when she ran back up the stairs. But she ran like she'd been doing something. So I chased her. Into an ambush—"

Kendy realized the Guardsman was so embarrassed at having tripped at the hedge that he hadn't even mentioned being hit by the toolbox.

"Captain, if you would listen to me—" Kendy began.

"Sir, do we have to listen to this liar?" the Guardsman blurted. "He's a campus troublemaker. I identify her. I recognize her face."

Kendy supposed the toolbox was still lying behind the Guard's desk and that there ought to be other ways he could prove that Amani was innocent.

"Listen—"

"Put her in the car," the captain said.

"Hold it," Kendy said. "I confess."

"Not again," the captain protested, turning away. "Put her in the armored car. Students are congregating."

Kendy noticed three students standing at a safe distance.

"I'll give you all sorts of proof that I—" he yelled following the

captain toward the front of the armored car.

"Then where are her coveralls?" the captain challenged.

"I ground them up in the disposal under the dorm—"

The engine of the armored car started with a stuttering roar.

"That proves you're lying to protect her," the captain shouted over the noise. I personally ordered all the old basement garbage disposals disconnected over a year ago."

He glared triumphantly at Kendy and stepped back up to the curb. His arm rose and his wrist flipped forward in a limp military signal.

The armored car growled forward. Kendy jumped in front of it, grabbed its upper radiator louvers as the lower ones hit his hip. His heels dragged along the pavement.

The captain screamed, "Hold it—"

The armored car's engine inhaled and died. Kendy clung to the steel slats which had been designed to protect its radiator from the populace.

"Goddamn Trojan Horse—"

A stentorian voice electronically augmented to heroic volume boomed against his eardrums.

"SON-OF-A-BITCHING ENGINE'S FLOODED AGAIN," the invisible Achilles bellowed through the car's loudspeakers. "SAM, I TOLD YOU AND TOLD YOU TO CHECK THE CARBURETOR."

Silence. Then a click as the

Guardsman realized his mike had been live.

The captain's suddenly miniature voice yelled, "No—no need to radio for reinforcements."

HIS hand closed on Kendy's shoulder. The captain tried with his other hand to disengage Kendy's fingers from the armored car.

But the captain was not strong enough. He was no Achilles.

"Let her go," Kendy said thickly, feeling high and low at the same time.

"Then let go of our car," the captain retorted. "We wouldn't be here if it weren't for troublemakers like you. Let go. I don't think you intend to be an agitator. It's her fault. You'd better realize it and cooperate with me. I have the power of so many alternatives I'd prefer not to react at all. Return to your room."

"Let Amani go."

Kendy noticed a timid crowd of four students had assembled upwind.

"But I've already committed myself," the captain was explaining. "I have to detain her for questioning. So let go of our armored car."

The captain's hand slid into his jacket. Kendy struck out and clamped down on the captain's wrist, preventing him from extracting the gas pen from his pocket.

The captain bent down to say quietly, "Look up. Our man in the turret has his choice of three

aerosol sprays. If I signal him you get one in the face."

Kendy thought the nozzles could not be depressed enough to spray him directly. The captain's face was close to his. Kendy tried to dislodge the captain's protective visor with his shoulder.

"We want to maintain our lenient image," the captain said softly. "One aerosol would make you vomit. Another would cause you to lose control of your bowels. The third would make you cry like a baby. No one wants to be made ridiculous."

"That includes you," Kendy grunted, looking around.

"Even if you run for it—" the captain pretended calm reason—"there are many ways we can get you. A squirt of invisible dye—and every time you passed a security streetlight in Greater L.A. the ultraviolet component in the light would cause your skin to glow purple."

"Great."

"But you can't escape. Look up at the biggest tube in the turret. It ejects blobs of quick-drying epoxy mixed with chemically shrinking polyester strings. If we used it you'd be flopping around in a glued cocoon. The parabolic mike on the turret would catch your shrieks of claustrophobia before your jaw was pulled shut. That voice-print might provide supplementary identification at the morgue—unless someone used a pencil point to open your nostrils."

Kendy laughed confusedly.

"Why don't you just arrest me?"

"I want to give you amnesty—you innocent fool!"

"Amani?"

"If she's innocent—of course. What do you think we are? We don't need trouble. I don't want trouble—"

"Neither do I." Kendy let go and flinched.

HE EXPECTED the captain to spray him with the gas pen. But the other shook his hand ceremoniously, as if before an audience of students. Bushes rustled in the momentary silence.

"Let's walk over to my little command car," the captain said.

Kendy's knees were rubbery.

"Where?"

"You can walk," the captain said. "Concentrate on walking. That whiff of gas in the room should have worn off by now. Come on. Your symptoms are mainly psychosomatic ones now. You've stopped fighting it. That's why you feel like collapsing."

Kendy felt so suddenly relaxed and dizzy he wanted to laugh. He realized he had wanted the captain to disbelieve his confession.

His emotions flip-flopped. He wanted to cry because he understood himself too well. If he had really wanted the captain to listen to him he would have described the centrifuge. He would have told the captain about the pictures. But he hadn't been able to make a total confession—not even to save Amani.

What am I?

He felt disillusioned with himself.

The motor of the armored car roared. The antique growled past him, carrying Amani away.

"Wait—"

While the captain helped him into the command car Kendy chattered frantically to himself.

"Never confess to anything. There are more, prag—pragmatic choices than guilt or innocence. Are you listening? Don't drive so slow! Fast? You won't find her fingerprints in the—why should I tell you? She'll pass your lie detector test. Ooooooooooeeeeeh—"

"You'll bump your head." The captain steered his command car to University Boulevard. "You're naive, son. I hate to disillusion you about her."

"But she's innocent," Kendy murmured. "And you'll lose your—I'm sorry," he moaned, "for what I've done."

"Like what? I'm sorry that you were accidentally assigned as her roommate," the captain stated. "I might as well explain to you while you're so gassed and receptive. She's not the first to dress up in coveralls and sneak into a building to visit her boy friend."

"Boy friend?"

"Probably a campus maintenance employee. Probably that's the reason she tried to enter the C.R.A.D. Building. It's not a serious offense if that was her reason."

"You're crazy."

Kendy laughed and felt rage seeping into his consciousness.

"I understand them," the captain earnestly pontificated, "better than they understand themselves. Last year we had a case like this. A custodial employee sneaked his girlfriend into a restricted area. I understand these—people."

"You're lumping them all together." Kendy laughed unevenly. "When I say *them* I'm doing it, too." He clutched the captain's arm and the car swerved. "Don't squeeze 'us together," Kendy cried. "Our faces—her face is disappearing. I don't want you to do that to Amani. She's Amani all by herself. That's who she is—Amani." He blurted, "You won't have a face, you—faceless uniform."

The command car turned into a sunken driveway. The Campus National Guard Building crouched behind floodlights. Above it, towering against the sky, was the dim majesty of the Doheny Library.

Kendy laughed.

"Your own fault," the captain retorted, "that we're here to keep the schools open."

"But I was just a little kid ten years ago—when the emergency was declared."

"You need us. The schools were burning."

"You were shooting—"

"Who do you think headed off the white vigilantes? We did. The National Guard. Sniped at from both sides."

"I don't want either side," Kendy muttered. "I want Amani."

THE garage doors clanged shut behind the automobile. The Captain parked next to the armored car. Kendy stepped out of the car, looked down at the captain's helmet and felt dizzy.

"I'm a helluva lot bigger than you are."

"I have the authority, however," the captain replied. "Go in there and sit down."

Kendy stumbled into a reception room. He looked for Amani, bumped his leg against a low table. Its coffee urn hissed.

"Sit down, please." Behind the counter, facing a switchboard, was a uniformed young lady with a sharp nose and chin. "Sit down, please."

"I protest."

She pointed to the coffee urn.

"Serve yourself," her voice said mechanically.

"To sober me up? I'll pour it on the couch."

"You're being filmed and the film will be sent to your parents."

"Where's Amani?"

He saw that the room had no windows but the wall facing University Boulevard featured a row of steel-capped—peepholes?

"I do not have that information," the young woman said tonelessly.

"I refuse!" he shouted.

"Refuse what?" she asked, glancing at him and becoming slightly human as she unplugged the electrical connection from her ear.

"To take a lie detector test."

"No one asked you."

Her switchboard buzzed and she turned away.

"Where's Amani?" he repeatedly demanded from the couch while his dizziness from the spray diminished and finally his mounting indignation helped him rise again. "I want Amani. I'm going to get her."

"Go ahead." The captain was standing behind the counter, scowling at him. "Go in."

Through the partly open door he glimpsed a dentist's chair or an electric chair on a chair equipped with a polygraph, a lie detector unit. He walked past it.

"Amani?"

She was standing in front of a steel-framed mirror, one hand clawing back her limp hair. Her expression was one of distaste—for her hair? She turned, her gaze narrowing.

He thought they were alone and pushed the door shut behind him with his foot.

"Amani?"

"Enda!" she said in a strangely harsh voice. "*Panya mwana-funzi.*"

He realized she was telling him to go away—and worse.

"I guess this room is bugged," he muttered, unable to accept any other reason for her speaking to him this way.

He knew the word *mwanafunzi* meant student. He thought *panya* meant rat.

He reached out his hand, wanting to touch her.

"Amani, I—"

"*Panya mdogo!*" For some

reason she was even refusing to speak English to him. "Panya *mdogo mdogo*."

Her mouth twisted. Now she was calling him a smaller rat or maybe a mouse.

"Amani," he tried again but heard the door opening behind him.

"I'm ready to leave," she said in cold English but not to him.

She spoke past him, as if he weren't there.

The uniformed young woman from the switchboard or a similar one was standing in the doorway with a bored expression.

"Go on. You can go."

Amani swished past him and out into the reception room. She hurried toward the steel exit door at the front of the building.

Kendy glimpsed the captain leaning against the counter and heard his apologetic voice. He was speaking into the telephone, apparently trying to explain something. He was blind to Kendy.

Kendy ran after Amani without asking if he could leave. She had pushed open the outer door. It swung back in his face. He shoved it outward, lurched into the glaring night. For an instant Amani was silhouetted by floodlights guarding buildings on the other concrete path. She turned left along the pedestrian Boulevard, as if trying to leave the campus.

He saw the mob had increased to five students and a cat, lounging beside the statue of Tommy Trojan, watching them.

"Wait, Amani, let me explain why I—"

He thought he could corner her at the National Guard booth, which defended the entrance to the University. But its barbed-wire gate was ajar. It had been opened for her.

SHE ran toward the roaring traffic on Exposition Boulevard. On the other side loomed the immense bulk of the old Los Angeles Memorial Coliseum. Beyond lay Nairobi. Buses roared. He grabbed her arm as she stepped off the curb.

"Wait for the light. I mean—don't go."

"Don't touch me, you lying—what are you? You were the one who tried to sneak into that building past that Guardsman. So why did those pigs arrest me?"

"Amani, I had no idea this would happen. I didn't think—"

"You had a bottle of Passblack. Didn't you? I thought about telling those bayonet pigs to hunt for it."

"I threw it away."

"They found those cotton gloves in our bathroom. They said they were mine. I should have said they were yours—you—what are you anyway?"

"I didn't think."

"I think you were using us," she blurted. "Why else would you fake yourself Black? You tried to burglar into that building. Didn't you know you'd make trouble for every Black on this

campus? When anything is bad they blame us all—"

"I didn't think—"

She studied him, her gaze gentling.

"I can't believe you're a racist provocateur," she murmured. "You weren't trying to start the whites shooting at us again—"

His jaw sagged. He felt horrified at what she had suggested —and equally at his own innocence and stupidity. He had known so little about his own country.

"Amani, no—"

"I signed a confession," she cried.

"What?"

He couldn't believe it.

"It was because—at least you were an enemy of the Guardsmen. Otherwise why would you be breaking into their building? Kendy, I didn't tell them about your bottle of Passblack. I didn't explain about the gloves because—I think, I hope you're a member of the Underground. If they found out—those Guardsmen would have detained you, sent you to a camp. You are against them, aren't you?"

Kendy swayed dizzily. He couldn't tell her the truth. She would hate him totally if he did.

"You were innocent," he protested. "What did you sign?"

"Nobody should be innocent," she said angrily, "so I signed their Number Three confession. It says I failed to cooperate during an investigation. It's funny. I did cooperate. I sat down in their electric chair. They asked me why I

tried to sneak into a building at night. They tried to tell me why. Supposedly I have a main man who works in there." Her teeth flashed. "Maybe I should be flattered. But I told the machine the truth. I don't. It believed me."

"Kendy muttered, "They're all insane."

"When their machine kept believing me," she said, "the Mau's face got pale—such an ugly color. He said he was going to question me all night if necessary. So I signed that confession. Kendy, I wanted to go home. I want to go home—but I feel ashamed. At least my confession says I didn't cooperate," she laughed unevenly. "At least you're a member of the Resistance."

Kendy winced. He felt terribly guilty and not guilty. He would never be able to tell her the truth. He was—had been—a spy from National University, the government's own training school. He had enrolled at U.S.C. to test campus security. What he had done was test the National Guard, to improve its security procedures, to strengthen it. He couldn't tell her that. She would think he was her enemy. But he wasn't.

"Wait, Amani—I love you."

"I don't love you, Kendy. Let go of me."

She dodged away through the screeching traffic on Exposition Boulevard. He ran after her across the midnight lawns around the Coliseum. He heard a bound-ary Guardsman blowing his whis-

tle. She wriggled expertly through the barbed wire fence. It snagged him.

"Get back to your own side of the street," she gasped. "I'll send Don for my things. I can't come back to S.C. But I'll come back somewhere else—because it's my country. I want to be a whole person, a dancer or teacher or—I don't know what. I'm not running away—" she cried as she walked away from him into shadows that moved.

Confronted by the gleaming rifle barrels of Black Security Patrolmen, he didn't climb through their fence. He watched her pass through their Nairobi Checkpoint.

"Go home, kid," said the white Guardsman beside him, on his side of the fence, "or I'll arrest you for a troublemaker."

Kendy's fist tightened on the wire.

"Sure."

He felt his heart pounding like a war drum as he crossed Exposition Boulevard. He thrust his thick plastic card at the Guardsman at the entrance to the University. He strode along University Boulevard. He looked up at the bronze statue of Tommy Trojan.

Wake up, stupid...

HIGH above Tommy's crested helmet stars were gleaming. Suddenly the distance in time between the City of Troy—buried three thousand years beside the Dardanelles—and the decaying newness of Los Angeles seemed

encouragingly short to him. Across each hundred years he visualized three generations of men. He smiled because the historical distance from Troy to L.A. was only ninety men lined up in time-changed costumes. It was a short time in which to expect men to awaken. But he walked faster.

"I will," he murmured, feeling as if his life were a momentarily glowing spark.

He had to hurry.

He thought of Mr. Smith at National University intricately plotting his future. Mr. Smith might never know what a blundering spy Kendy had been. He smiled wryly at the way he had confessed and confessed. He wouldn't do that again.

He would continue his tutorial with Dr. Smyert. Now he really wanted to learn. What was it like on the other side? He wanted to see. If they didn't shoot him, he thought bemusedly, the experience might help him grow.

Toward what?

He cocked his head, eyeing the stars. The power was out there, signaling across a billion years, beeping into the surviving radio-telescopes in the United States. It seemed untranslatable—but perhaps there were undiscovered Rosetta Stones? The Russians had discovered something on Phobos and retreated. Frantically they had begun searching our own Moon. They had something there beneath a fragile plastic dome and were afraid.

But not afraid of power?

They're afraid of change...

He wasn't.

Of course, you never knew about change—what it was going to be or where it would take you. Something had changed him lately.

As he strode along Childs Way his thoughts ran back to Amani. His throat hurt. He felt incomplete. His personal world had been so small. And he knew Nairobi would never satisfy Amani. Nor would any other city-state. The whole world seemed to be hardening while people struggled to fit into it.

He considered himself and was ashamed.

But nobody's impossible...

He looked up.

Even diamonds come from muck.

He grimaced. He was growing up, whatever that meant. He smiled, still feeling gassed. Like a fool he wanted power—but not to change the world, exactly. He inhaled, imagining a world free to change itself in every direction for everyone. He walked faster, visualizing a world diversifying to fit each person.

Like worlds growing for everyone...

With youthful resiliency he ran through the night.

Beautiful worlds. To fit us, Amani. Changing as we change...

As he leaped through the dazzling darkness he felt his worlds overlap.

Dance beautifully, Amani... ●



whatever happened to unknown?

In 39 issues in 1939-43 it established an undying reputation for jaunty, mordant fantasy—then perished in the wartime paper shortage. Much of the good stuff from Unknown has been picked up and republished, but there are still some goodies, and Berkley has got hold of a few.

For instance, Norvell Page's wild Pres-ter John swords/sorcery novels, **FLAME WINDS** (published last month: X1741, 60¢) and **SONS OF THE BEAR-GOD** (November: X1769, 60¢). And, this month, the memorable **DARKER THAN YOU THINK** (X1751, 60¢) by Jack Williamson. Later on, we'll be doing two of the absolute Unknown classics by L. Ron Hubbard—**FEAR** and **THE ULTIMATE ADVENTURE**—in one volume.

Also in October...

THE ICE SCHOONER, Michael Moorcock (X1749, 60¢)
GRIMM'S WORLD, Vernor Vinge (X1750, 60¢)

...and November

FIVE TO TWELVE, Edmund Cooper (X1768, 60¢)
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TRULY

HUMAN

HUMAN

HUMAN

Some persons still living believe
that humans are able to communicate . . .

DAMON KNIGHT

As is well known, } the autochthones of Sol III { have been under
By way of introduction, } constitute a

study for three hundred cycles, }
riddle to our sociologists, }

inability to form Threes, paradoxically tripled with { a high level of
a complex social
many indications

technical competence. }
organization. } Sol III accordingly { an urgent moral
of advanced symbol use. } presents { a challenge to our

problem, } { truly human, }
system, } for the autochthones, if considered { subhuman, } must be

linked into the Threefold Order }
quarantined or destroyed }

{ Native systems of vocal sounds
{ All attempts to form temporary

and written characters }
Threes with the autochthones } having proved { resistant to analysis,
decisive failures,

the governing Three, { as a practical solution,
admittedly in desperation, } adopted a proposal

for an objective test. }
for a crude events-level experiment. } Accordingly, a medium-class

personal vehicle was { requisitioned }
converted } and dispatched to
Land Mass Three . . .

THE thing was, Nick Russell told himself irritably, he had not been that drunk. He remembered coming back to the hotel, hanging up his clothes, piling into bed. So why was his collar too tight and what in God's name was he doing in a chair?

He opened one eye, wincing at the light. What he saw made no sense, and he closed the eye again.

He had been to two of those places in Pig Alley where the girls took off everything except their hats. Next had come that little

bar on the side street and the snooty brunette in the low-cut dress—boy, he had told her off—then he had said the hell with it and had gone to bed.

Now he had on all his clothes and the damn things were too tight. He grunted, opened both eyes. The walls were funny. TV screens, gadgets everywhere. He tried to get up but could not.

He stared incredulously at himself. Broad white straps crossed his chest and thighs. Under them he wore a brown sports jacket and the pants of his good blue

suit, a red necktie and a bright yellow sports shirt.

"Is this supposed to be funny?" he asked out loud. He pulled at the straps. They would not give. He filled his lungs.

"Hey, let me out of here."

A voice at his left elbow made him jump.

"Wer spricht? Was ist los hier?"

Another voice came from his right.

"Qu'est-ce-c'est que se passe? Qui parle? Laissez-moi, je vous en prie."

"Talk English, dammit."

His necktie was choking him. It was in some kind of crazy knot he had to untie it to get off the tie. He squirmed around in his chair as far as he could but it was not far enough. The buckles must be in back.

His heart was thumping.

"Listen," he said loudly, "I'm an American citizen and if I don't get out of here pretty damn quick there's going to be hell to pay." This little room, no door, yellow walls, all those gadgets. "You out there, you hear me?"

The other voices started again. They seemed to come from grilles in the walls—under the two big TV screens.

"Je suis ingénieur du R.T.F. On me cherchera, je vous assure si je n'irai pas à mon travail. Pourquoi m'avez-vous enlevé?"

"Wer spricht, ich hab' Sie gefragt! Sprechen Sie nicht Deutsch?"

Both voices sounded as upset and bewildered as Russell himself felt. Could there be three of them, tied down to chairs in little rooms like this one? And if so, what for? Russell stared around, trying to figure it out. The wall in front of him was curved, like part of an upright cylinder only about a yard wide. The cylinder was covered with gadgets. The wall behind him was curved, too—he could just make it out by straining around in the chair. The two side walls, the ones with the TV screens, slanted toward each other. The room was shaped like a wedge of cheese, with a hunk cut off at the point. Put three rooms just like this one together and what would you get? A disk, with a cylinder in the middle.

"Flying disk," he said aloud. "Oh, God."

"Comprends pas. Je ne parle ni l'anglais ni l'allemand. Parlez français, nom de Dieu!"

Parlay fransay, he knew that much. And *du vang*, and *voalay voo cooshay avec mwah?* That was all you needed to get along in Paris—the Frogs all spoke English, anyhow.

"Ich verlange das Sie—"

The German voice cut off and Russell grabbed the arms of his chair. All the wall gadgets had just

lit up. Red ones, yellow, green. The TV screen at the right showed a picture of the Earth, a green-and-yellow ring around it. There was a yellow blip where the green and yellow met and after a moment he could see that the blip was moving slowly. The screen to his left was divided into three segments, with a bunch of colored dots in each one. Now what? The dots seemed to be arranged in the same pattern as the gadgets in front of him.

"Green, red, yellow," he said. At the sound of his voice, one segment of the screen blinked yellow. "That's funny."

It blinked again.

"Was bedeutet das Licht?"

One of the other segments blinked.

"C'est bizarre, ça—" Now the third segment blinked. *"Attention, c'est nous! Nous trois! Ici le boche, là l'américain..."*

In the other screen, the yellow blip had advanced a little farther, trailing its green line, eating up the yellow line ahead of it.

Russell cleared his throat.

"Look, you two guys. My name is Russell—Nick Russell. Don't either one of you speak any English?"

"Content de faire votre connaissance, Monsieur Russell. Permettez que je me présente aussi: je m'appelle Duvoisin. Mais, à répondre à votre question—non, je

n'ai que quelques mots d'anglais. Parlons français?"

"Ich sprache nur Deutsch. Das ist für mich genug. Ich heiße Kalbmann."

"Kalbmann? Glad to know you."

"Enchanté."

"Look, I don't know what this is all about but it seems like we're all in it together. There's got to be some way to get out of this thing, if we just—woop!"

A distant roaring, more felt than heard. A heavy weight was pressing him back into the chair. It lasted for a few seconds, then cut off abruptly. He felt himself swing forward against the straps again. In the right-hand screen, the track of the yellow blip was no longer traveling in a circle. The yellow line dipped down in a long curve until it touched the Earth. The blip began to travel along it.

"Attention, pour l'amour de Dieu! Nous tombons!"

Russell stared at one screen, then the other. In the left-hand screen dots in two of the segments were blinking urgently—yellow in one, green in the other.

"Versteh' nicht. Versteh' nicht. Warum dann—"

Yellow, that was the one that was blinking as the German talked. Green must be the Frenchman. In his own segment, the bottom one, nothing was happening.

"Mais pourquoi attendez-vous? Appuyez sur les boutons, mon Dieu!"

THE right-hand screen's blip was sliding down its yellow arc. Russell began to feel alarmed. Could that mean what he thought it meant? He swung to the left-hand screen again. A yellow button and a green one, the same as the gadgets in front of him. He leaned forward and tried to press them but they wouldn't go in. Must be the other two people were supposed to press them—so why didn't they?

"Hey, you guys, press the buttons!"

The yellow blip was sliding inexorably down its arc. Now the other two were both yelling. He put his hands over his ears and tried to think. His own segment remained blank. They were supposed to push the buttons—a horrible thought. Suppose their segments were blank, too, and Russell knew which buttons they were supposed to press but they didn't. And they knew—the dots of color went on blinking.

"Jesus Christ," he said. "Listen, you what's-your-name, the Frenchy! Push the green button, the one in the third row, you understand me? Push the green button!"

"Monsieur, c'est absolument inutile de parler dans une langue

que nous ne comprenons pas. Reflêchez-vous, en ce moment nous tombons vers la terre! Il faut que nos agissions avec resolution, et au premiere, que vous appuyiez sur le bouton jaune—"

"Warum können Sie nicht sprachen wie den Menschen? Achtung, Ami, auf den ersten gelben Knopf drücken!"

"Listen to me, for God's sake. You, the German, push the yellow button, you hear me? The one on top! Push it, you dumb Kraut!"

"Monsieur Russell, je vous en prie—appuyez—"

"Don't keep talking Frog to me, Goddamn it. You give me a pain—just press the green button in the third row! In the third row!"

"Lasst mich auch etwas sagen, Ami. Sie machen ein solcher Lärme, das man nicht denken kann. Wollen Sie das Leben oder der Todt haben? Lieber Gott, auf den gelben Knopf—"

"Mais pourquoi ne m'entendez-vous pas? Vos écoles n'ont-ils pas vous enseigné un seul mot de français, nom de Dieu?"

"You're like all the rest of them—you can speak English all right if you want to but you're too damn snooty. Look, for Chrissake—"

"Wir keine Zeit lubrig haben! Franzose, bitte—"

"Will you shut up? Listen, Frenchy, the hell with him—you

and me, maybe that's enough. Will you please just give one little push—"

"Espèce d'un crétin! Si nous eûmes seulement une langue com-

mune, tout cela n'eut pas arrivé. Mais évidemment ce langage doit être français, la plus précise, la plus logique—"

"Oh, God!"

silence

As might have been expected, }
To our sorrow and dismay, } the autochthones { solve the problem
did not } cooperate in the

as presented. }
experiment. } The attempt was therefore { inconclusive, } and the
judged } a failure, }

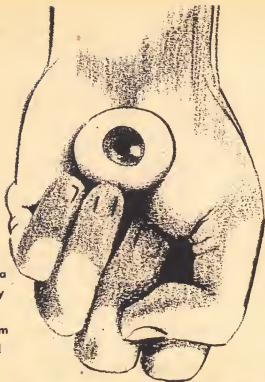
vehicle was destroyed.

The governing Three recommend { quarantine }
restudy } of Sol III. This decision
destruction }

is considered { inadequate. }
ridiculous. } The Three therefore { beg }
premature. } request } their
demand }

immediate { replacement. The dilemma presented }
disbandment. The stresses to which } ...
disgrace. My mental pain is such }

Kerling was a man of many parts—and he gave them away freely!



THE GOD OF COOL

J. W. SCHUTZ

THE Kerling twins faced each other across the desk in John's rectory. Once to tell them apart had been impossible. Now, at thirty-five, John's limp marked him as he moved around the desk to lay his hand on his brother's arm. "The right thing to do, Michael," he said, "is to give yourself up."

Mike's bronzed skin and athletic build contrasted oddly with his brother's clerical pallor and soft, well-manicured hands.

"I knew you were going to say that, John, before I came here."

"Each of us has always known what the other would say. So of course you won't go to the police?"

Mike impatiently brushed back a lock of black hair.

"I can't, John. Bergan's boys will swear I killed Judy. And she was shot with my gun. I could be convicted of murder."

"Haven't you overlooked one thing? You have enough evidence of dozens of other crimes your associates have committed to become state's witness—bargain for your life."

"Even an innocent man can't bargain away murder—once the case is in the courts. I can't get near the police without being arrested. I can't stay much longer in Jax, either. I don't have a car and Bergan's men are watching the airports and other means of transport. I'm being hunted. I shouldn't even be here with you."

"Let me take your evidence to the police," John said.

"You know I can't let you do that. Do you think the people you call my associates—" Mike paused and grinned again—"would stop at killing a man of God?"

"I'm not afraid."

"Look, John. Just get me out of town. That's all I ask—for now, anyhow. I shouldn't even ask that much but I have to get away somewhere while I figure this thing out. I'll think about giving you the stuff later, maybe."

"Do you have any money?"

Mike shrugged sardonically. "I just sold my body to City General Hospital for their tissue bank. One hundred bucks. We'll pick it up on the way. I'll make out. Just get me out of town."

"You sold your body?"

"Sure. What's wrong with that?"

"Nothing, I guess. The soul survives."

JOHN stood at the gothic frame of the rectory window. Gazing out into the north-Florida spring morning he looked the classic picture of the man of God. When he turned he had reached a decision.

"Before I do try to get you away from here, Michael, I want you to tell me about this heroin thing. Were you guilty of smuggling drugs into this country? How did you get into this dirty business?"

"Yes. I was guilty. I'll tell you the story again. I didn't know what I was smuggling. Beating the law was kind of exciting—and profitable. When I found out what the packages I was bringing in contained I tried to break away from the gang. They killed Judy

as a warning to me to stay away from the police—and to get me to leave town. They'll kill me if I'm caught. They may kill me anyway. Bergan's the man behind the smuggling—and Bergan runs this town."

Mike finished. His brother eyed him quietly, then took a hat from the mantel.

"All right, Mike. Meet me in the little street in back. I'll go out the front. You go out through here." He indicated a door leading to the rear of the rectory. "Give me just five minutes to bring the car. We'll go by the hospital."

Alone in the room, Mike surveyed it briefly, then took a thick, unmarked envelope from his coat pocket and stuffed it among some untidy papers in the back of the center drawer of his brother's desk. Once or twice while waiting the required five minutes he started toward the desk as if to retrieve the envelope. Then, with a doubtful grimace at his watch, he left it there and made his way out to the alley.

The brothers saw no one when they left the street behind the rectory but Mike gave directions for a pattern of turns which he hoped would throw off any trailers. As he crouched deep in his seat tension made pain in his back and neck. From time to time he stole glances at his brother's serene, assured figure, upright in the

driver's seat. For a moment he felt a wave of tenderness for the stern, gentle body beside him, so much like his own. But he could never have lived John's kind of life.

They approached the emergency entrance of the City General Hospital. A dark sedan skidded out of a side street and pulled level with them on the driver's side. Mike had time only to see the machine-gun and grab John's clerical collar and slam him down on the seat, then leap out of the car.

The bullets caught him as he scrambled up the hospital steps. He felt a monstrous shock in his spine just above the collar as blood and white chips of bone sprayed the lower panel of the door marked EMERGENCY.

Then he felt nothing.

NOTHING. Then, slowly, an awareness of the passage of time. Months? Years? Cold. Deadly cold, iron hard. A cold not felt but only known.

Silence. No sound. Not even the dull drumming of blood in the ears one hears when listening to nothing. No movement, no rising and falling of the diaphragm, no shifting of the eyes beneath closed lids, no imperceptibly balancing muscles. Darkness. Absolute darkness. Nothing but an impossibly thin thread of consciousness.

*I'm Mike Kerling and I'm alive.
Hang on to that, Mike, boy. You're alive...*

TWO interns in white pushed open the door marked CRYOGENIC STORAGE. They carried thick, padded gloves. A puff of cold air, electric with dryness, came out as the door closed behind them.

The first intern scanned a row of receptacles like huge file drawers in the wall. He ran a chrome and rubber trolley up under one of them.

"C-15," he said.

He donned his gloves and turned a chromed wheel, raising the trolley to the exact level of the lower edge of the vault. A light tap with a rubber hammer broke the thin seal of frost at its edges and the door swung open with a puff of searing cold air.

"Who was this joker? Do you know?"

"Yeah. A guy some gangster shot right in front of Emergency years ago. Bullets took out a four-inch section of his cervical vertebrae. They had him in here in minutes. He'd only signed donor's papers a day or two before."

"Kind of rushing things, weren't they? Was he legally dead? Or medically dead for that matter?"

"Who knows? But at the then state of the art there was sure as hell no favorable prognosis for him."

A bright metal cylinder a yard in diameter rolled out onto the trolley. A twist of a wrench in gloved hands split the tube longitudinally, revealing the white body of a man, crisp black hair faintly powdered with frost, a determined, full-lipped mouth framed in deep vertical creases. The thorax gaped open, revealing a cavity where the heart once beat, cut ends of veins and arteries indicating missing kidneys, oddly geometrical patches of vanished skin showing pale muscular tissue beneath.

"Suppose he wasn't dead. Could he have known what was happening to him? When they were cooling the body down, I mean."

"Pretty damned unlikely."

"Yeah. But suppose he did know? Nobody ran an EEG on him, did they?"

"Don't suppose so."

"Could have had some brain action for months—even after they froze him. When they do cryogenic brain surgery the alpha rhythm never even falters. Wonder what he thought when they did the first transplant from him?"

"Shut up, why don't you?"

The second intern grinned and went on needling while the first continued careful preparations to raise the body above the level of its hemicylindrical coffin.

"He might even feel those pieces of skin when someone accidentally sticks a pin in them. You know,

like some amputees claim they can feel an itch in a missing arm?"

"Lay off, for Christ's sake."

"You're going in for neurosurgery. You ought to think about these things. How about that thing Birnbaum did a while back. You remember the frog bit? Touch a severed frog leg with a galvanic probe and it kicks. Birnbaum stimulated the frog's brain and the leg kicked even when it was fifty yards away in another room. How about that? Suppose—"

"Shut up."

Silence fell for a time. One intern wore a faint grin, the other a frown. With infinite care—to avoid chipping the ice-hard flesh or touching it with bare hands—they worked with sterile, motor-driven saws to section the right arm above the elbow. As it came away the first intern asked a serious question.

"Who gets this?"

"A guy who used to be a pretty good surgeon until the AMA tossed him out for keeping bad company," the other said grudgingly. "They say he patches up people the police shoot up and keeps his mouth shut. Nosy today, aren't you?"

The arm was laid carefully into a metal tray on another trolley. The huge tube was resealed and slid carefully into its vault. Valves, tubes and meters carrying liquid nitrogen were checked.

The interns left, pushing the

small trolley with the arm. The cryogenic storage room was silent, save for the whispering hum of tireless motors.

LACKING stimulus of any kind, the spidery thread of cryogenic consciousness that was Mike Kerling roamed the edges of madness. A man's vivid memories are pitifully few. In the endlessness of black, silent, and immeasurable time Mike recreated them not once but many times.

He recalled that the days of John's illness with polio had been a period of misery for the little boy who hovered between his strangely lifeless toys and the door to his brother's room. Sometimes he had been sure he could feel John's pain in his own thin body. Then John was learning to walk again, his flabby arm around Mike's sturdy shoulders. There had also been the day when their father, a huge, patient and grave man, had taken them to a neighbor's pool. John had been the first to learn to swim without the support of Dad's big hand.

Mike tried often to picture his father's face but it would not come clear. His mother he could not recall at all. Both had died long ago in a car crash. The orphanage had been mostly a gray iron double bunk, John's bed below, his own above.

Mike remembered the first girl he had ever kissed, a brown-eyed precocious beauty with a pageboy bob. He had kissed her hurriedly and clumsily in the orphanage pantry. The memory of that kiss was sweet now.

Then there had been the time just before he went north to take up his college scholarship and his first job, when, at the Kiwanis beach picnic, he had slipped his fingers under his girl's sweater, touching the soft, naked curve of her young breast. She had hesitated a heart-thundering moment before she had wriggled out of his arms and run back to join the others at the campfire. He could no longer remember her name.

His graduation was only rows of black cap-and-gowned figures seen from behind in the auditorium. The day John was ordained was more vivid in his memory than his own graduation—he had felt derision, envy.

Mike's succession of post-college jobs furnished his present darkness only with brief, disconnected flashes, some of them meaningless.

Then the army. His first experience of the Orient and his first taste of combat. He had wet his fatigues while admiring his courage. He had killed—and had found he liked the men he slew.

These memories Mike lived over and over in his near-mad awareness in the unseen darkness. His con-

sciousness shut out memories of his wife, Judy, as too painful. He had been the cause of her death—and would find a way to avenge them both if ever a moment of true consciousness were granted him. But for now she was simply dead.

Once, after the uncounted thousandth repetition of his tattered string of memories, Mike was conscious of words forming in his mind, the substance of a sermon.

John's voice.

... in an age when men have learned to replace a human heart, failing organs, crushed limbs, even nerves—and soon, they say, eyes that will see again. In an age, I say, when dedicated men are laboring to make death almost unnecessary, other men are stalking the streets of this city, murdering with impunity...

John — oh, John, you fool. Stop — they'll kill you...

Mike knew fear.

His effort to reach John somehow—to silence him—stretched the impalpable fiber of his own existence until, for the first time, Mike felt pain. A mounting tower of shriveling fire. Death, final and irrevocable, lay just beyond a snapping strand of spider's web.

SMOKE from a cheap cigar hung in the air, palely outlining an anemic ray of sun which crept

horizontally into the dim basement apartment. Two men sat there. One, gray and bloated, sat in a straight chair before a small table scattered with surgical instruments. His sleeves were rolled to the elbow. The left forearm was thick and hairy, the right pale and clean-lined. He was making short, delicate incisions in a strip of brown wrapping paper, pausing occasionally to sip from a glass.

The second man, narrow-eyed and flashily handsome, stirred restlessly and gestured with the cigar.

"How's it going, Doc?" he said in a flat, disinterested voice.

Dr. O'Byrne grunted sourly.

"Okay, I guess. It doesn't respond quite normally yet. I get a sort of burning in it sometimes—like the room was suddenly on fire. Nerves still mending, I suppose. Twitches, too, now and then, as if it weren't my own."

The younger man tapped a gray gob of ash onto the greasy carpet and spread it with the pointed toe of his shoe.

"It ain't. It belongs to that punk, Mike Kerling, that tried to rat on Bergan a couple of years back. That's comical. If Kerling knew who was using it now—and what for—they fingers would be around your throat some night."

O'Byrne flung down the scalpel with a snarl.

"Damn you to hell, Rionna.

Some day I'll take a hunk of lead out of you down here and you'll learn not to be so wise."

IN CRYOGENIC STORAGE the eternally whispering pumps tirelessly circulated the liquid nitrogen and Mike Kerling searched for new images to add to his meager chaplet of memories. From time to time the more impassioned passages of John's sermons entered Mike's black cave of consciousness with almost the effect of light. At other times thoughts of Judy and revenge brought flashes of fiery torture Mike shrank from—then returned to, like a child prodding a bruise.

One day Mike felt his right arm. It moved, apparently of its own volition, the hand and fingers doing something at once firm and delicately precise. He considered it, then cautiously attempted to control its motions. Instantly it was alive with fire and Mike recoiled, gibbering, from the true darkness of death.

Never do that again...

Here was a danger not to be prodded. Let the arm recover movement and sensation in its own way. That way lay hope.

The spark of hope brought its own burning but less intense and requiring no effort of will to quench it. But to John's sermons and his own visions of things past Mike added a subjective in-

terest in the movements of a hand and arm—and forced hovering madness back another inch.

IN THE kitchen surgery of Doc O'Byrne's basement apartment Bergan's gunman, Rionna, lay squealing on a high white table. He was calling on a whole calendar of saints. A white cloth covering his nose and mouth was stained by the overflowing pool of blood brimming from his eye-sockets.

"Mary, Holy Mother! The pain—I can't stand the pain. Doc—do something—give me a shot of something—"

O'Byrne plunged a needle into Rionna's arm and watched impassively as the gunman began to relax. Rionna took a deep shuddering breath.

"Doc. Am I gonna be blind?"

"I reckon." Doc shrugged. "Piggy's razor sliced through both eyeballs. You should have left his woman alone."

"Stuff that. Can't you do something? Give me a couple new eyes? I seen in the paper it can be done now. You'll do it, won't you Doc?"

"Not me. Even if I had the use of the hospital facilities I can't trust this hand. It burns me sometimes and I have to drop the scalpel. Maybe Bergan can get City General to do something. I don't know. He's got influence at City Hall." O'Byrne chuckled.

"Kerling's stiff's still got eyes. Blue ones. How'd you like those?"

"No. Not him. Not him, Doc."

Rionna's voice, despite the heavy sedative, rose to a scream. "Doc, them burning pains you got. He does that. The eyes—Jesus—think what he'd do with the eyes."

"Superstitious bastard. Better Kerling's eyes than peddling pencils on some lousy street corner. I'm going to call Bergan, you hear?"

No response. Rionna had fainted.

INEXORABLE black time crawled slowly. Mike Kerling knew the presence of his eyes. He was aware of the movements of eyeballs, the pressure of eyelids. Darkness still—but real darkness with real light beyond. Then came light—blinding pinwheels of red and orange, masked momentarily as eyelids blinked.

Then a face. Bergan's.

What are you doing here, Bergan? Come to finish the job?

Bergan's lips moved. What was he saying? Mike could hear no sound. Fury stirred in him. And defiance.

All right, make your play, Bergan. Get it over with...

But the eyelids fell and again he knew darkness, silence and memories—one of them new. The silently speaking face of Bergan.

The next time and the time

after that when the eyes opened Mike saw nothing but the pale gray walls of a room, a white sheet. He tried cautiously to move the eyes by his own will. The fire came again, worse than ever before. Leave well enough alone. Enjoy seeing.

A white enameled night stand. A glass with some pink liquid in it. Hands, palm upward on a white blanket. One hand turning over.

Not mine. They've given me someone else's hands. But I can feel my hand—somewhere else—doing something different. That's Frankie Rionna's hand, with the silver dollar tattooed on the back. I've got... hands... eyes... I've... he's... RIONNA'S GOT MY EYES! Oh, God...

Understanding at last what had been done to him, Mike's consciousness fled down an endless corridor.

FOUR MEN sat around the carved rosewood desk in Harry Bergan's downtown office. Bergan leaned back in a leather-covered swivel chair. Doc O'Byrne sat in a matching piece a few feet away. Frankie Rionna occupied a straight chair, Piggy Butz another.

In his strange world of liquid nitrogen Mike saw what Rionna saw—Bergan's well-manicured hands and immaculate cheviot jacket, O'Byrne's face with an untidy

string of pewter hair falling over a bloodshot eye, Piggy's bulbous nose, heavy jowls and eyes sunk in rolls of fat, watching Rionna coldly. In that distant day when the scattering of Mike's body had begun, Piggy and Rionna had been in the overtaking car, Piggy driving.

Mike made no attempt to control the eyes Rionna was darting at Piggy or the others or to stop the maddening figeting of Doc's right hand. Fiery pain and looming eternity had conditioned him merely to watch. Even when Bergan slapped a newspaper down on the desk and jabbed a slim finger at a photo of John Kerling in his pulpit, he controlled all reaction. The paper's headline read: PASTOR PROMISES EVIDENCE SOON AGAINST UNDERWORLD FIGURES.

Bergan's face was suave, impassive. The manicured finger jabbed viciously as he spoke to Rionna. There was death in the set of his mouth.

Rionna made gestures of protest. He put his hands briefly to his eyes. Bergan's poker face took on a tinge of disgust. He turned to Piggy.

Piggy glanced down at the news photo, looked contemptuously at Rionna. Then, in a ripple of flabby chins, he nodded once.

The effort of following every move without the control of his

eyes and without the use of his ears—as Piggy led Rionna and O'Byrne to a parked car in the street—was both terrifying and nauseating for Mike. But he resisted with every atom of his force the impulse to flee to the dark comforting cold. There was a moment when Doc O'Byrne would have turned away from the car but, braving the torment of fire, Mike set his hand firmly on the car's door handle, forced him to enter.

The car swung away from the curb and pulled up a few minutes later in front of John's parish house. Rionna hurried to the back and Mike saw nothing but the alley until Piggy appeared at the back door, the housekeeper's terrified face peering over his shoulder. The two men rejoined O'Byrne in the car and drove off in the direction of the docks.

When they pulled up behind an aged, parked car Mike recognized as John's, Mike seized Rionna's will and violently crossed his eyes. Rionna evidently made some outcry. Piggy slashed him fiercely across the face with the back of his hand. Mike felt the pain and his vision blanked out. This would not do. He must use the eyes to see what the trio intended to do.

THE three found John in an alley between two deserted ware-

houses. He was walking in the direction of a group of shacks on the edge of the river, carrying a paper grocery bag. When he heard the thugs behind him he turned and faced them calmly. Piggy showed tiny yellow teeth in a mirthless grin and slipped a straight razor out of his coat pocket. John's face stiffened. He had always had an unreasonable fear of knives, even when he and Mike had been boys in school. But he held his ground.

Don't be a fool, John. Run, for God's sake. Run—

John whirled awkwardly, as if obeying. He dropped the bag, which burst at his feet. A large can rolled down the alley. Piggy snatched it up and hurled it with terrible force at the back of John's head. John dropped to the ground, a bundle of twisted clothing and twitching limbs.

Piggy stooped over the body and the razor in his hand flashed. It was then Mike wrenched Rionna's eyes around and fastened them on Piggy with an icy, frozen will. Rionna tried to turn away, then screamed and screamed. His gun was in his right hand. He tried once more to turn, then raised the gun and fired. The top of Piggy's head exploded and he crashed over the body of his victim, whose throat sprayed a fountain of blood.

For a heartbeat O'Byrne, his

face blank, moved away from the welling blood. Then the muzzle of Rionna's gun came up and fixed him with its vicious black eye.

"You gotta do something, Doc. Come on, move. The Blessed Virgin's on his side."

O'Byrne started to say something placating about superstition, then his right arm blazed in fiery agony and the words became a whimper. Hardly knowing what he was doing, he stumbled to the two bodies. Thrusting Piggy's ruined head aside, he tore away John's clerical collar and, with instruments from his coat pocket, went to work with more surety than he had ever known. As he finished stemming the flow of blood he raised his head and listened.

"Sirens—the fuzz. Come on, Rionna, let's get out of here."

O'Byrne snatched his instrument case and ran.

Rionna raised his arm hesitantly then placed the muzzle of the pistol between his oddly blue eyes.

For Mike Kerling the darkness was a cool refuge.

THE two white-swathed figures in Cryogenic Storage were no longer interns. One was a surgeon

now, the other a neurologist. The eyes of the neurologist crinkled in a smile above his mask.

"Our old friend C-15. Did you know C-15 and the Reverend Kerling were brothers?"

"Yes. Twins, in fact. That's why I picked him. The new technique for transplanting neural tissue needs all the help it can get, especially for the motor center of a brain. So, with identical genes—"

THE nurse was so stiff with starch she seemed brittle. The telephone was sooty black in her hands.

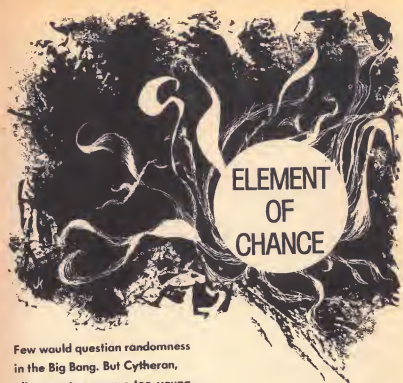
"You said to call you, Doctor, when Reverend Kerling began to regain consciousness."

"That's right, Nurse. Any mobility?"

"Yes sir. He moved his right hand, opened his eyes and spoke."

"Speech as well? Splendid! What did he say?"

"He looked as if he were meeting someone he knew. Then he said, 'Yes, I found the envelope.' Then he waited a little and said, 'In thy Father's house there are many mansions. Welcome home.'"



ELEMENT OF CHANCE

Few would question randomness in the Big Bang. But Cytheron, alive scant eons, was too young and reckless to give a damn!

BOB SHAW

THE summons was far from welcome.

Only that morning Cytheron had turned the world to glass. Not objectively, although he would one day reach the stage where it would have been possible, but subjectively — by modifying his vision to utilize neutrinos. He had attempted the same thing without

success some centuries earlier. The memory of the previous failure was contributing to his present enchantment because it made him aware of the processes of his own maturation. His body was transparent now, sensed only as an interaction of its elements with the mesons of the cosmic ray bombardment, moving across the face

of a crystal globe within which geological strata writhed like luminous vapors.

Above him the sky was strange. His eyes could peer into the hearts of giant red suns, yet were aware of no other stars. He was exalted, inhaling reality and breathing it out as a liquescence of music, poetry and magic.

A day, a year, a decade—all would have been as one in the new sensory configuration. But it seemed that only seconds had passed when the summons arrived, written on daylight, keyed to the singularities of his own cerebral rhythms so that no other denizen of this world could be aware of it except, perhaps, as an impression that a fleeting cloud had crossed the sun. Cytheron readjusted his eyes and found himself on a sloping plain where dry snow like flakes of amethyst swirled down from a green sky, not to lie dormant, but to flow and coalesce with the currents of invisible magnetic rivers. Beyond the plain was a mountain range of milk-white rock, riven by fitfully fluorescing glaciers.

He was able to orientate himself by it.

Cytheron reached outward with his mind and *skorded*. In an instant he was standing on another plain far across the world, close to a group of eight elder thanii, members of his own species. There

was no snow here—instead a warm amethyst rain paraded in regular curtains and broke in translucent archways above the group's individual screens. A herd of indigenous six-legged animals cropped the lacy grass all around. But so that the beasts would not be alarmed or disturbed in any way the thanii were permitting light to pass through their bodies. Cytheron immediately adopted the same mode.

I answer your summons, he thought. Why did you call?

You must know. The eight elders thought as with one mind—a unison which never failed to fill Cytheron with dread. You have come of age, and the group mind is ready to receive you.

But—Cytheron's protest remained stillborn as he realized the truth of what was being said. He had come of age. A thousand years and more glimmered in his memory like a dissolving dream. I'm not ready.

You are ready. The group voice was kind but inflexible. And we are ready for you.

I have no doubt that you are prepared to receive me—but what shall I gain in exchange for my youth?

Your racial heritage of experience and wisdom.

Which means I shall become old, doesn't it, elder thanii?

You cannot conceive what you

shall become, Cytheron—and there lies the source of your apprehension. You must have faith in the ways of our kind. You must believe that we know best—and now prepare to be assimilated.

Never!

Cytheron *skorded* as he formed the thought and at once he was haloed by amethyst flakes of desiccated snow. The distant mountains wavered slightly. Then the thanii were with him again, invading his mind with cool tendrils. He cried aloud and *skorded* at random—brown riverbed darkly rolling, amber spires of an amber city sipping the morning sun, a blue forest's introspective hush—but the elders held to him easily and his fear grew.

A strange peacefulness burgeoned within him. He knew a subtle loosening and realized, he had almost surrendered his identity to the group, had almost yielded his individuality. His despair took him outward from the face of the planet. He paused briefly on the third moon but the shattered silver daggers of the horizon began to waver and he knew he had not escaped. Another leap—a giant world's saffron sands under crimson sky; leap—white hell, heart of moribund sun; leap—sentient hill of black jelly shifting restlessly beneath alien stars.

And all the time the elder thanii's hold grew firmer.

Cytheron experienced a single moment of insanity. Before fully understanding what he was doing he had *skorded* to the one place in that region of the galaxy where nobody—in his opinion not even the thanii—could reach him.

HAVING endured the fantastic death throes peculiar to its species, the quasar was at peace. The process of extinction had begun eons earlier, when the incredibly massive body exhausted its nuclear energy potential and started collapsing radially. Density increased during the contraction until the attendant gravitic field became so fierce as to imprison all radiation and the quasar's own light began to orbit around it. But the same contraction brought a spasmodic renewal of life: gravitational energies became available, wracking the still-vast sphere with explosions repeatedly pushing its radius back outside the limit where radiation can be trapped.

For ten times a thousand years the quasar fluctuated between two diameters—one above and one below the critical dimension. Since there is no way of communicating with or receiving information from an object which imprisons its emanations, the quasar could be considered as periodically entering and leaving the normal continuum. Finally, however, even the fund of gravitic energy was depleted. The

quasar folded the stuff of space-time in around itself and —*phit!*— vanished.

Only a silent black hole of gravity marked its position in the stellar concourse.

Cytheron realized the enormity of his mistake almost at once.

The surface of the quasar was an inferno of introverted, recirculated energy—but the thanii had long ago learned the secret implicit in the universal truth that without resistance there can be no force and he was physically at ease. It was a short and relatively simple step from making his body transparent to light to allowing all forms of radiation pass through it unhindered. The concern he felt sprang from the discovery that he was trapped.

His ability to *skord* was unimpaired but its effectiveness was canceled by the awesome distortions the quasar had wrought in the geometries of reality. Cytheron could *skord* any imaginable distance—but only in a straight line—and in the vicinity of the dead quasar a straight line was a circle. He could reach any point on its surface instantaneously but he could conceive of no way to leave it.

All at once, union with the elder thanii—so repugnant a short time earlier—seemed infinitely desirable. It came to Cytheron that

he was little more than a child and had behaved with a child's arrogance and intolerance. The summit of his conceit had come when he had accused the elders of trying to take from him. In the anguish of selfknowledge he screamed—and came close to allowing the laminar flow of pent energy to scatter his body to the white winds of hell.

Be calm, Cytheron, the elder thanii's corporate thought said. That is not the way.

You've found me.

Cytheron was overwhelmed with relief as he turned and saw the group of eight, looking hearteningly familiar and composed.

It was not difficult. You have much to learn.

I know, I know. He abased himself fervently. May I suggest that the first thing you show me is the method of skording through this barrier of gravity? I have no desire to remain here any longer.

That is understandable—but there is no way to skord through such a barrier.

What? Then I—all of us are trapped.

That is not the case. We will destroy the barrier.

The multiple thought of the elder thanii was calm and Cytheron began to get his first real inkling of the magnitude of their combined intellect.

But how can it be done?

Part of the matter comprising this sphere must be reconstituted as antiparticles—the annihilation energy resulting will be sufficient to scatter its mass over a large volume of space, thus dispersing the gravitic field.

You can do this?

We can. The process has already begun.

But—The vastness of the operation appalled Cytheron. It will be the equivalent of a nova, a supernova. Nearby star systems could be triggered off—worlds with life on them might be engulfed. I would prefer not to be freed—to die rather than cause the death of another being.

Do not be alarmed. We elders have lost none of our reverence for the counter-entropic force. Had freeing you meant the destruction of life, of even one individual, we would have been forced to leave you on this sphere. However, you were lucky. There will be the equivalent of a supernova but the only star close enough to be triggered off is without planets.

But the cosmic ray bombardment, the neutron flux, is bound to flood the entire region. Will no inhabited worlds be affected?

None. As we said, you have been very lucky, Cytheron. We examined all the stars in this neighborhood and have found only one solar system. It has nine evolving worlds—but is in a very early stage

of development and life will not begin there until long after the violence of the explosion has abated.

I see. I'm glad.

Cytheron sought a way to express his gratitude but all his powers of thought were lost temporarily as antimatter was created at the hands of the thanii and the outraged universe fell on itself in a blaze of attritive fury.

THE elders had been correct in their analysis of his fears, Cytheron realized. He had not been able to conceive what he would become after assimilation into the group mind. Nothing in his previous state of separateness could have prepared him for the translation into the adult state of being, its sense of completeness and belonging, its transcendental peace. The sapience and experience of a thousand centuries surrounded him like a luminous cloud, modifying and yet at the same time establishing and reasserting his uniqueness.

He paused briefly near a medium-sized sun with nine planets—the solar system closest to the stellar holocaust the thanii had engineered on his behalf. The sun and its retinue of nascent worlds swam undisturbed in the galactic tide, unaware of the cosmic storm approaching them at almost the speed of light.

As you see, Cytheron, the

group mind thought. There is no life here. The planetary masses are in an early stage of formation.

I do see. He indicated a globe with an usually large moon, third from the sun. I imagine that this one will best approximate the optimum conditions for intelligent life.

We agree.

I must eventually return here, Cytheron thought. I can't help feeling some curiosity about the way in which life will develop on this world. I also feel a certain responsibility.

Responsibility?

Yes. There is no life here yet but I dread the thought that the consequences of my behavior may have some adverse effect on its future course. After all, the very structure of the planet will be changed when it encounters the

neutron flux from the supernova.

You worry unduly, Cytheron, the group mind informed him with amusement tempered by its thousand centuries of wisdom. The only physical effect the explosion will have on this world is that there will be a high degree of neutron capture, leading to the formation of rather heavier elements than are normally found on a world of that type.

As he sensed the elder thanii's amusement and was drawn deeper into the group mind, Cytheron felt his unformed fears lessen and vanish. He could find nothing in that limitless fund of knowledge to suggest that the development of an intelligent species could be affected—in any noticeable way—by the presence of heavy metals, such as gold. Or uranium. •

Coming in next month's IF

HAPPINESS IS A WARM SPACESHIP

James Tiptree, Jr.'s novelette about the hot test ship on star patrol. Every man aboard has a minority problem, a space problem—and the same damn girl problem!

TO KILL A WORLD

Irwin Ross's tangy tale of indestructible aliens who bring microwar to an Earth accustomed to miniwars.

GENEMASTER

Barry Alan Weissman's backward glance from time ahead to time now—or maybe a little later than now. A strangely touching and tender story!



A.
BERTRAM
CHANDLER

THE SOUL MACHINE

Lieutenant Grimes was caught in a war of psyches, neither of them his own—or human...

"I'M AFRAID, Lieutenant," said Commodore Damien, "that your passenger, this trip, won't be able to help out in the galley."

"As long as he's not another assassin, he'll do for me," said

Grimes. "But I've found, sir, that anybody who likes to eat also likes, now and again, to prepare his own favorite dishes."

"This one does. All the time."

Grimes looked at his superior dubiously. He suspected the com-

modore's sense of humor. The older man's skull-like face was stiffly immobile but the pale gray eyes held a sardonic glint.

"If he wants galley privileges, sir, it's only fair that he shares, now and again, what he hashes up for himself."

Damien sighed.

"I've never known officers so concerned about their bellies as you people in the *Adder*. All you think about is adding to your weight."

Grimes winced—as much because of the unfairness of the imputation as in reaction to the pun. The *Couriers*—small, fast ships—did not carry cooks, so their officers, obliged to cook for themselves, were more than usually food-conscious. *Adder's* crew was no exception to this rule.

Damien went on, "I've no doubt that Mr. Adam would be willing to share his—ah—nutrition with you. But I don't think that any of you, catholic as your tastes may be, would find it palatable. Or, come to that, nourishing. But who started this particularly futile discussion?"

"You did, sir," said Grimes.

"You'll never make a diplomat, Lieutenant. It is doubtful that you'll ever reach flag rank in this service, rough and tough spacemen though we be, blunt and outspoken to a fault, the glint of honest iron showing through the

work-worn fabric of our velvet gloves—ah—where was I?"

"Talking about iron fists in velvet gloves, sir."

"Before you side-tracked me, I mean. Yes, your passenger. He is to be transported from Lindsfarne Base to Delacron. You just dump him there; then return to base forthwith." The commodore's bony hand picked up the heavily sealed envelope from his desk, extended it. "Your orders."

"Thank you, sir. Will that be all, sir?"

"Yes. Scramble!"

GRIMES did not exactly scramble. But he walked briskly enough to where his ship, the *Serpent Class Courier Adder*, was berthed. Dwarfed as she was by the bigger vessels about her, she still stood tall, proud and gleaming. Grimes knew that she and her kind were referred to, disparagingly, as "flying darning needles" but he loved the slenderness of her lines, would not have swapped her for a hulking *Dreadnought*. In a *Dreadnought*, of course—he constantly reminded himself—he would have been no more than one of many junior officers. *Adder* was his.

Ensign Beadle, his First Lieutenant, met him at the airlock ramp, saluted. He reported mournfully—nobody had ever heard Beadle laugh and he smiled but

rarely—"All secure for lift-off, Captain."

"Thank you, Number One."

"The passenger's aboard."

"Good. I suppose we'd better extend the usual courtesy. Ask him if he'd like the spare seat in Control when we shake the dust of base off our tail vanes."

"I've already done so, Captain. It says that it'll be pleased to accept the invitation."

"It, Number One? It? Adam is a good Terran name."

Beadle actually smiled.

"Technically speaking, Captain, one could not say that Mr. Adam is of Terran birth. But he is of Terran manufacture."

"And what does he eat?" asked Grimes, remembering the Commodore's veiled references to the passenger's diet. "A.C. or D.C.? Washed down with a noggin of light lubricating oil?"

"How did you guess, Captain?"

"The Old Man told me—in a roundabout sort of way. But—a passenger? Not cargo? There must be some mistake."

"No mistake, Captain. It's intelligent, all right, and it has a personality. I've checked its papers, and officially it's a citizen of the Interstellar Federation, with all rights, privileges and obligations."

"I suppose our masters know best," said Grimes resignedly.

IT WAS intelligent and it had a personality. Grimes found it quite impossible to think of Mr. Adam as a machine. This robot

was representative of a type of which Grimes had heard rumors but it was the first one that he had ever seen. Only a very few of its kind existed, in all the worlds of the Federation—and most of those few were on Earth itself. To begin with, they were fantastically expensive. Secondly, their creators were scared of them, were plagued by nightmares in which they saw themselves as latter-day Frankensteins. Intelligent robots were not a rarity—but intelligent robots with imagination, intuition and initiative were. They had been developed mainly for research and exploration and could survive in environments that would be almost immediately lethal to even the most heavily and elaborately equipped man.

Mr. Adam sat in the spare chair in the control room. He had no need at all to sit but he did so—in an astonishingly human posture. Perhaps, thought Grimes, he could sense that his hosts would feel more comfortable if something that looked like an attenuated knight in armor were not looming tall behind them, peering over their shoulders. His face was expressionless. It was a dully gleaming ovoid without features. But it seemed to Grimes that there was the faintest flicker of luminosity behind the eye lenses that could betoken interest. His voice, when he spoke, came from a diaphragm set in his throat.

He was speaking now.

"This has been very interesting, Captain. And now, I take it,

we are on trajectory for Delacron."

The voice was a pleasant baritone, not quite mechanical.

"Yes, Mr. Adam. That is the Delacron sun there—at three o'clock from the center of the cartwheel sight."

"And that odd distortion, of course, is the resultant of the temporal precession field of your Drive—" Adam hummed quietly to himself for several seconds. "Interesting."

"You must have seen the same sort of thing on your way out to Lindisfarne from Earth."

"No, Captain. I was not a guest, ever, in the control room of the cruiser in which I was transported." The shrug of his gleaming metal shoulders was almost human. "I—I don't think Captain Grigsby trusted me."

That, thought Grimes, was rather an odd way of putting what he himself felt. But he knew Grigsby, had served under him. Grigsby, as a naval officer of an earlier age on Earth's seas, would have pined for the good old days of sail, of wooden ships and iron men—and by "iron men" he would not have meant anything like this Mr. Adam.

"Yes," the robot went on musingly, "I find this not only interesting, but amazing."

"How so?" asked Grimes.

"It could all be done—the lift-off, the setting of trajectory, the delicate balance between acceleration and temporal precession—so much faster by one like myself."

You mean "better" rather than "faster" but you're too courteous to say it...

"You're flesh and blood creatures, Captain, evolved to suit the conditions of just one world out of all the billions of planets. Space is not your natural environment."

"We carry our environment around with us, Mr. Adam." Grimes noticed that the other officers in Control—Ensign von Tannenbaum, Navigator; Ensign Beadle, First Lieutenant; Lieutenant Slovtovny, Radio Officer—were following the conversation closely and expectantly. He would have to be careful. Nonetheless, he had to keep up his end. He grinned. "And don't forget," he said, "that Man, himself, is a quite rugged, self-maintaining, self-reproducing, all-purpose robot."

"There are more ways than one of reproducing," said Mr. Adam quietly.

"I'll settle for the old-fashioned way," broke in von Tannenbaum.

Grimes glared at the burly, flaxen-headed young man—but too late to stop Slovtovny's laughter. Even Beadle smiled.

John Grimes allowed himself a severely rationed chuckle.

Then: "The show's on the road, gentlemen. I'll leave her in your capable hands, Number One. Set Deep Space watches. Mr. Adam, it is usual at this juncture for me to invite any guests to my quarters for a drink and a yarn—" Mr. Adam laughed.

"Like yourself, Captain, I feel the occasional need for a lubri-

cant. But I do not make a ritual of its application. I shall, however, be very pleased to talk with you while you drink."

"I'll lead the way," said Grimes resignedly.

IN A small ship passengers can make their contribution to the quiet pleasures of the voyage—or they can be a pain in the neck. Mr. Adam, at first, seemed pathetically eager to prove that he could be a good shipmate. He could talk—and he did talk on anything and everything. Mr. Beadle remarked about him that he must have swallowed an encyclopedia. Mr. McCloud, the engineering officer, corrected this statement, saying that he must have been built around one. And Mr. Adam could listen. That was worse than his talking—Grimes had the impression of invisible wheels whirling inside that featureless head, of information either being discarded as valueless or added to the robot's data bank. He could play chess, of course—and on the rare occasions when he lost a game it was strongly suspected that he had done so out of politeness. It was the same with any card game.

Grimes sent for Spooky Deane, the Psionic Communications Officer. He had the bottle and the glasses ready when the tall, fragile young man seeped in through the doorway of his day cabin, looking like a wisp of ectoplasm decked out in Survey Service uniform. He sat down when invited, accepted

the tumbler of neat gin that his captain obligingly poured for him.

"Here's looking up your kilt," toasted Grimes coarsely.

"A physical violation of privacy, Captain," murmured Deane. "I see nothing objectionable in that."

"And just what are you hinting at, Mr. Deane?"

"I know, Captain, that you are about to ask me to break the Rhine Institute's Privacy Oath. And this knowledge has nothing to do with my being a telepath. Every time we carry passengers it's the same. You always want me to pry into their minds to see what makes them tick."

"Only when I feel that the safety of the ship might be at stake."

Grimes refilled Deane's glass, the contents of which had somehow vanished.

"Are you frightened of our passenger?"

Grimes frowned. Frightened was a strong word. And yet mankind has always feared the robot, the automation, the artificial man. A premonitory dread? Or was the robot only a symbol of the machines—the mindless machines that every year were becoming more dominant in human affairs?

Deane said quietly, "Mr. Adam is not a mindless machine."

Grimes glared at him. He almost snarled, *How the hell do you know what I'm thinking?*

The query died unuttered. Not

that it made any difference.

The telepath went on, "Mr. Adam has a mind as well as a brain."

"That's what I was wondering."

"Yes. He broadcasts, Captain, as all of you do. The trouble is that I haven't quite got his—frequency."

"Any hostility toward humans?"

Deane extended his empty glass. Grimes refilled it. The telepath sipped daintily.

Grimes said, "I don't think so. But his mind is not human. Does he feel contempt? Not quite. Pity? Yes, it could be. A sort of amused affection? That's it."

"The sort of feelings that we'd exhibit for—say, a dog capable of coherent speech?"

"Yes."

"Anything else?"

"I could be wrong, Captain. I most probably am. This is the first time that I've eavesdropped on a nonorganic mind. Adam seems to emit a strong sense of mission."

"Mission?"

"Yes. The pattern reminds me of that priest we carried a few trips back—the one who was going out to convert the heathen Tarvarkens."

"A dirty business," commented Grimes. "Wean the natives away from their own and quite

satisfactory local gods—so that they stop lobbing missiles at the trading post."

"Father Cleary didn't look at it that way."

"Good for him. I wonder what happened to the poor bastard?"

"Should you be talking like this, Captain?"

"No. But with you what I say doesn't matter. You know what I'm thinking, anyhow. But this Mr. Adam, Spooky. A missionary? It doesn't make sense."

"That's just the feeling I get. I'm not trying to make sense."

"All right. Perhaps you do make sense. The robots of Adam's class are designed to be able to go where Man himself cannot go. In our own planetary system, for example, they've carried out explorations on Mercury, Jupiter and Saturn. A robot missionary on Tarvark would have made sense, being impervious to poisoned arrows, spears and the like. But on Delacron, an Earth colony? Why?"

"The feeling I have doesn't extend beyond Adam."

"There are feelings and feelings," Grimes told him. "This is a nonorganic mind that you're prying into. Perhaps you don't know the code, the language—the answer has to have been built into him."

"Codes and languages don't matter to a telepath." Deane con-

trived to make his empty glass obvious. Grimes refilled it. "Don't forget, Captain, that there are machines on Delacron—intelligent machines. They don't show a very high order of intelligence, I admit. But you must have heard of the squabble between Delacron and its nearest neighbor, Muldoon—"

Spooky let the thought dangle.

Grimes had heard of the trouble. Roughly midway between the two planetary systems was a sun with only one world in close orbit about it. The solitary planet was a fantastic treasurehouse of radioactive ores. Both Delacron and Muldoon had laid claim to it. Delacron wanted the rare metals for its own industries, the less highly industrialized Muldoon wanted them for export to other worlds of the Federation.

And Mr. Adam? Where did he come into it? Officially, according to his papers, he was a programmer, on loan from the Federation's Grand Council to the Government of Delacron. A programmer was a teacher of machines. An intelligent machine to teach other intelligent machines? To teach other intelligent machines what?

And who had programmed Adam? Or had he—simply, as it were, happened?

A familiar pattern—vague, indistinct—was beginning to emerge.

It had all been done before, this shipping of revolutionaries into places where they could do the most harm by governments absolutely unsympathetic toward local aspirations.

"Even if Mr. Adam had a beard," said Deane, "he wouldn't look much like Lenin."

And Grimes wondered if the driver who brought that train into the Finland Station knew what he was doing.

GRIMES was merely the engine driver. Mr. Adam was the passenger, and Grimes was tied down as much by the Regulations of his Service as was that long-ago railwayman by the tracks upon which his locomotive ran. Grimes was blessed—or cursed—with both imagination and a conscience. And a conscience is too expensive a luxury for a junior officer.

Grimes actually wished that in some way Mr. Adam were endangering the ship. Then he, Grimes, could take action, drastic action if necessary. But the robot was less trouble than the average human passenger. Adam made no complaints about monotonous food, stale air and all the rest of it. About the only thing that could be said against him was that he was far too good a chess player. But just about the time Grimes began to find excuses for not playing with him, Adam made what

appeared to be a genuine friendship. He began to prefer the company of Mr. McCloud to that of any of the other officers.

"Of course, Captain," said Beadle, "they belong to the same clan."

"What the hell do you mean, Number One?"

Deadpan, Beadle replied, "The Clan MacHinery."

Grimes groaned, then, reluctantly laughed.

He said, "It makes sense. A machine will have more in common with an engineer than with the rest of us. Their shop talk must be fascinating." He tried to imitate McCloud's accent. "An' tell me, Mr. Adam, whit sorr't o' lubricant d'ye use on yon ankle joint?"

Beadle, having made his own joke, was not visibly amused.

"Something suitable for heavy duty I should imagine, Captain."

"Mphm. Well, he's out of our hair for the rest of the trip if Mac keeps him happy."

"He'll keep Mac happy, too, Captain. He's always moaning that he should have an assistant."

"Set a thief to catch a thief," cracked Grimes. "Set a machine to — what?"

"Work a machine?"

Those words would do, thought Grimes. But after Beadle had left him he began to consider the implications of what had been dis-

cussed. McCloud was a good engineer—but the better the engineer, the worse the psychological shortcomings. The machine had been developed to be Man's slave but ever since the twentieth century a peculiar breed of Man had proliferated—a species all too ready and willing to become the machine's servants, far too prone to sacrifice human values on the altar of efficiency.

Instead of machines' being modified to suit their operators, men were being modified to suit the machines. And McCloud? He would have been happier in industry than in the Survey Service, with its emphasis on officer-like qualities and all the rest of it. As it was, he was far too prone to regard the ship merely as the platform that carried his precious engines.

Grimes sighed. He did not like what he was going to do. It was all very well to snoop on passengers, on outsiders—but to pry into the minds of his own people was not gentlemanly.

He got out the gin bottle and called for Mr. Deane.

YES, Captain?" asked the telepath.

"You know what I want you for, Spooky."

"Of course. But I don't like it."

"Neither do I."

Grimes poured the drinks, handed the larger one to Deane. The Psionic Communications Officer sipped in an absurdly genteel manner, the little finger of his right hand extended. The level of the transparent fluid in his glass sank rapidly.

Deane asked, his speech ever so slightly slurred, "And you think that the safety of the ship is jeopardized?"

"I do."

Grimes poured more gin. But not for himself.

"If I have your assurance, Captain, that such is the case."

"You have."

Deane was silent for a few seconds. He seemed to be looking through rather than at Grimes, staring at something—elsewhere.

Then: "They're in the computer room. Mr. Adam and the Chief. I can't pick up Adam's thoughts but I feel a sense of—rightness? I can get into Mac's mind..." The grimace of extreme distaste was startling on Deane's featureless visage. "I don't understand."

"You don't understand what, Spooky?"

"How a man, a human being, can regard a hunk of animated ironmongery with such reverence."

"You're not a very good psychologist, Spooky, but go on."

"I'm looking at Adam through Mac's eyes. He's bigger, somehow,

and he seems to be self-luminous. There's a sort of circle of golden light around his head."

"That's the way that Mac sees him?"

"Yes. And his voice. Adam's voice. It's not the way that we hear it. It's more like the beat of some great engine. And he's saying, 'You believe and you will serve.' And Mac has just answered, 'Yes, Master. I believe and I will serve.'"

"What are they doing?" Grimes demanded urgently.

"Mac's opening up the computer. The memory bank, I think it is. He's turned to look at Adam again. A panel over Adam's chest is sliding away and down. I see some sort of storage bin in there—rows and rows of pigeonholes. Adam has taken something out of one of them—a ball of grayish metal or plastic, with connections all over its surface. He's telling Mac where to put it in the memory bank and how to hook it up."

Grimes, his glass clattering unheeded to the deck, was out of his chair. He paused briefly at his desk to snatch open a drawer and take from it his .50 automatic. He snapped at Deane, "Get on the intercom. Tell every officer off duty to come to the computer room, armed if possible." He ran through the door out into the alleyway, then fell rather than clambered down the ladder to the

next deck—the next one and the next. At some stage of his descent he twisted his ankle painfully but kept on going.

The door to the computer room was locked from the inside but Grimes, as Captain, carried always on his person the ship's master key. With his left hand—the pistol was in his right—he inserted the convoluted sliver of metal into the slot, twisted it. The panel slid open.

McCloud and Adam stared at him, at the weapon in his hand. He stared back. He allowed his gaze to wander, but briefly. The cover plate had been replaced over the memory bank—but surely that heavily insulated cable leading to and through it was something that had been added, was an additional supply of power, too much power, to the ship's electronic bookkeeper.

McCloud smiled—a vague sort of smile, yet somehow exalted, that looked odd on his rough-hewn features.

He said, "You and your kind are finished, Captain. You'd better tell the dinosaurs, Neanderthal Man, the dodo, the great auk and all the others to move over to make room for you."

"Mr. McCloud," Grimes said, his voice—not without effort on his part—steady. "Switch off the computer. Then undo whatever it is that you have done."

It was Adam who replied: "I am sorry, genuinely sorry, Mr. Grimes, but it is too late. As Mr. McCloud implied, you are on the point of becoming extinct."

Grimes was conscious of the others behind him in the alleyway.

"Mr. Beadle?"

"Yes, Captain?"

"Take Mr. Slovtovny with you down to the engine room. Cut off all power to this section of the ship."

"You can try," said Mr. Adam. "But you will not be allowed. I give notice now—I am the Master."

"You are the Master," echoed McCloud.

"Mutiny," stated Grimes.

"Mutiny?" repeated Adam, iron and irony in his voice.

He stepped towards the captain, one long, metallic arm upraised.

Grimes fired. He might as well have been using a peashooter. He fired again and again. The bullets splashed like pellets of wet clay on the robot's armor. Grimes realized that it was too late for him to turn and run. He awaited the crushing impact of the steel fist that would end everything.

A voice said, "No—no—"

Was it his own? Dimly, he realized that it was not.

The voice came again: "No—"

Adam hesitated—but only for

a second. Again he advanced. And then, seemingly from the computer itself, arced a crackling discharge, a dreadful, blinding lightning. Grimes, in the fleeting instant before his eyelids snapped shut, saw the automaton standing there, arms outstretched rigidly from his sides, black amid the electric fire that played about his body. He toppled to the deck, making a metallic crash.

When, at long last, Grimes regained his eyesight he looked around the computer room. McCloud was unharmed—physically. The engineer huddled in a corner, his arms over his head, in a foetal position. The computer, to judge from the wisps of smoke still trickling from cracks in its panels, was a total write-off. And Adam, literally welded to the deck, still in that attitude of crucifixion, was dead.

(Continued from page 3)

18 December 1955

Is 300 feet large enough to be affected by the gravitational stresses from Earth that determine Roche's limit? Scientists don't know, but they suspect not.

And if not—then what was the original object, and what in the world—or out of the world, more likely, made it break up on December 18, 1955?

Dead? thought Grimes numbly. *Dead?* Had Adam ever lived in the real sense of the word?

But the ship, he knew, had been briefly alive, had been aware, conscious, after that machine who would be God had kindled the spark of life in her electronic brain. And a ship, unlike other machines, always has personality, a pseudo-life derived from her crew, from the men who live and work, hope and dream within her stalwart metal body.

This vessel had known her brief minutes of full awareness—but her old virtues had persisted, among them loyalty to her rightful destiny.

Grimes wondered if he would dare to put all this in the report that he would have to make. It would be a pity not to give credit where credit was due.

Of course, we are not suggesting that a large extra-solar space probe, charged with the observation of Earth on behalf of the citizens of Alpha Centauri VIII, at that date split itself into ten or a dozen exploration modules. We wouldn't suggest anything.

But it's kind of interesting to think about, isn't it?

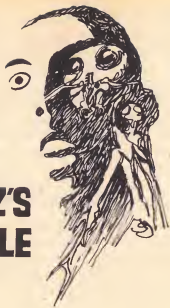
—FREDERIK POHL

THE SOUL MACHINE

77

ERSALZ'S RULE

At odds of a
million to one
everything is fair—
including living
a stranger's life!



GEORGE C. WILICK

RESTING his front pair of legs, the Referee silently listened to Therdon air his rage. Therdon called up images of every ancestor in Arman's nest and drove them forth with wild invective. Arman stroked his aphid absently and slowly sucked the cool ooze from its back. Eventually Therdon tired and fell silent.

Passing the equivalent of a sigh,

the Referee restated his position for the hundredth time.

"There are no rules that force an opponent to resign from the game. The Referee may only call a game where both Movers claim victory upon the death of a Player. Beyond this I am not allowed to interfere in any way with the play."

Therdon sulked behind a blackening silence. Arman should have

been the one who was disturbed, for he was losing the game. The game was in its forty-second year and Arman should have resigned twenty years ago. But he had another hunch and, like all gamblers who heeded hunches, he knew the next one was the winner. Arman needed another foul and Therdon was in the mood to commit one very soon.

THOMAS GREEN and Adam Heitz were created on the same day forty-two years ago and placed into human environmental circumstances that were relatively equal. Both Players were given the same mental and physical qualities and the nonplaying humans with whom they were placed had acquired about the same amount of wealth and social bearing. From this point on the Mover, Arman, was responsible for Adam Heitz and Therdon was responsible for the Player Thomas Green.

And from this point on the game was never even.

The people who knew Thomas Green swore he was silverspoon and could do no wrong. Everything he touched seemed to flourish and turn into gold. He had built his father's small grocery store on the lower East Side into a multi-million dollar produce distributing company. The occasional incidents of trouble fate visited upon him

were always ended to his satisfaction and success.

He lived on Long Island, on one of those exclusive estates at the end of a private lane that connected to a semiprivate, paved road. Thirty rooms of house and forty acres of lawn overlooked a private inlet and marina. The house itself was acceptably horrible in a French Gothic/Early American sort of way. The building inspired Green and he delighted in decorating with Spanish Mediterranean furniture, Persian rugs and modern art.

His children by several marriages were placed in the best schools in Massachusetts. His present wife was twenty-four years old and had been recruited from the dancers in one of his downtown clubs. She was ravishly beautiful, polished and completely paid for.

Green was listed in *Who's Who* and considered to be governor timber by the right party. His appearance was unusually youthful. His thinning hair maintained its original line and his figure was kept trim by bouts on the tennis court with his mistresses. He played handball, polo and sailed alone from his private marina on deep-sea fishing ventures.

But his friends, of which he had many, were starting to show concern over his often eccentric behavior. He would go into fits of rage that always ended up with his nearly killing himself on some fast-

moving machinery. A psychiatrist had been moved quietly into the circle but could find nothing wrong with Green.

What Thomas Green did not have he did not want. What he did not do he had done before or did not care to do. For forty-two years he had silently wondered when it would all end but it never did and he began to know that only death would stop it.

ARMAN felt a wash of contentment as Therdon finished with a flourish his series of moves.

"Foul," he claimed. The Referee bent forward to study the board while Therdon exploded in a flurry of oaths and wriggling obscenities. Arman watched his opponent with a certain amount of pity. He had withheld victory from Therdon for twenty years and the win would have allowed his opponent to take his seat among the Elder Workers. Frustration had caused Therdon to play carelessly and this foul was the final one.

After several moments the Referee returned to his former position and stated, "The claim of Foul is allowed in this case by reason of a violation of rule four-fifteen, which provides that no Mover may use his Player in such a way as to endanger the life of a nonplayer, directly or indirectly. I therefore decree that the penalty of a for-

feited turn is incurred by the Mover Therdon."

Arman bowed in acknowledgment to the award.

He said, "The Mover Arman declines the penalty by reason of exercising his right to invoke Ersalz's rule."

SENSIBLE people avoided Adam Heitz as they would a black cat. Adam was a first-class loser. If he touched a machine it would break. If he bought fruit at the street stand it would be rotten or wormy. If he got on an elevator he sneezed three times. He had been sued once for trespassing while trying to complain about a dog bite. He tried to help a lady across a busy intersection and she broke her ankle slipping off the curb.

Adam lived in South Philadelphia on the fifth story of a walk-up overlooking the rail yards. His wife weighed two hundred pounds and had been his cousin when they were forced to get married. They had six kids and had not touched each other in more than three years. The children slept with their mother in the one bedroom while Adam stayed on the couch where his asthmatic coughing would not bother anyone.

After his release from the reformatory Adam had sold his father's dry-goods business and used the money to pay off gambling

debts. He had managed to keep enough money to buy an old garbage truck and eked out a living from a minor downtown route that no one else bothered with.

The apartment was decorated in early nineteen-forties graffiti and broken by plaster holes to offset the falling ceiling strips. Adam spent most of his time lounging before the TV in his shorts and T-shirt and drinking warm beer. He had trained himself to hear the set's speakers without distortion from his wife's constant nagging and the children's screaming.

Heitz had been a hunch player all his life and had somehow managed to lose on every one. He had wanted to give up ages ago, as his hair and stomach had done, but something drove him on. Maybe prosperity was right around the corner in the next garbage can. Maybe the next hunch would cop the Irish Sweepstakes. Maybe.

THE game chamber was almost empty of sound after Arman's announcement. Even the preening aphids stood still. Suddenly the Referee busied himself counting the allowed claims of foul to ascertain that the proper number had been committed. Therdon, whose features had contorted during the pause, swallowed and grinned, then finally laughed in tremendous relief.

"It's finally over."

Arman agreed, "Yes, in one way or another."

"You can't be serious. The odds are a million to one," Therdon said.

"Exactly," nodded Arman.

The Referee spoke, "The count of the Mover Arman is correct, as twenty-five claims of foul have been allowed. Rule three-o-one, subsection three, states that any Mover against whom twenty-five or more fouls have been committed may exercise rule three hundred. Rule three hundred, popularly known as Ersalz's Rule, states that a Mover may call for the Rotater in an attempt to reverse the positions of the Players in respect to their physical environment. If the petitioning Mover is successful the game will continue. If unsuccessful, the game is terminated. Do both Movers understand the situation?"

"We understand," they answered formally.

The Rotater was rolled out by several slaves and moved into position beside the Referee. Therdon felt like a participant in a pistol duel who is forced to stand fire from a blind man. It wasn't likely he would be hit but there was still that chance, that one chance in a million. The Rotater was a makeshift device of sixteen variously sized wheels aligned on a common shaft. Each wheel had different

combinations of red and white marks on the circumference and a marking line ran horizontally across the face of all wheels.

With a kick of his leg the Referee tripped the spring clamp and all the wheels spun into a pinkish motion. Arman felt that hunch with all his being. It would work this time. He would win. All white or all red—either would win. It had only happened once and that was over two thousand years ago, when Ersalz did it. The first wheel slowed to a stop on white. Ersalz had won on red.

OFTEN, without either's being aware of the coincidence, both Players would do their basic chores together—eating or sleeping or working. At the moment they were shaving. Adam was waving his straightedge back and forth across the strap in a vain effort to hone the steel. A nick under his chin bled profusely as he watched his face freeze up in the peeling mirror. He lifted the razor, gritted his teeth and took the stroke.

Thomas admired himself before his bronze-trimmed mirror as the sounds of his electric razor echoed off the marble walls of the bathroom. He liked to shave in the nude and his tanned body attested to the fact that he enjoyed swimming that way, too. He could hear his wife washing in her own bath and let his mind dwell on the

image as he worked the razor about his jaw.

THE last wheel slowed and stopped on white—sixteen in a row. Therdon's confident grin was gone, replaced by an indescribable expression. Arman felt something crawl in his mind and he wanted to scream. The Referee flicked the lock on the Rotator to set the machine for validation.

Then, calmly, the Referee ordered the switch of environments.

ADAM jerked back as the electric razor touched his face. He slammed it violently down into the sink, where it shattered and flew into pieces across the room. He most have screamed then, because after a while his wife, Thomas's wife, came running. She found him with one hand touching the mirror while the other was exploring his body. She ran to him and just held on, a woman's sense telling her this was all that was needed.

Adam knew it was a dream. He did not understand how it could happen this way but he knew it was a dream. Tingling chills running through him from the body contact of the woman made him urgently aware that he had better get on with it before he awoke.

Thomas was not as fortunate. He laid open his face with the straight razor. As he jerked back to see what had happened his eyes focused for the last time as

a sane man. He screamed, too, but he did not stop screaming. He ran from the bathroom, stumbling about until he found the door that led into the hallway. Then he charged down the stairs to the street, wearing only a towel about his waist and dripping blood from his arms and chest.

Thomas Green ran in circles in front of the apartment house, simply screaming and waving his blood-stained razor. Women were fainting in little heaps here and there and finally a policeman arrived. He could only analyze what he saw and no one blamed him later for drawing his gun and trying to disable the beserk citizen. But Thomas had, at long last, inherited Adam's luck and the single bullet caught

him through the heart. He fell dead across a garbage can, Adam's can.

ARMAN stared at the board in disbelief. The Players had been beyond the control of the Movers. His Player was alive and the obvious winner. Minutes ago he was the worst loser to ever disgrace the games. It was fantastic, unbelievable.

"Unfair," said Therdon in tears, "It's unfair—unfair!"

Arman wanted to agree but could find no words.

The Referee regarded Therdon coolly.

"My dear Mover," he said. "At odds of a million to one, everything is fair."

FORECAST

DOWNWARD TO THE EARTH

... Read that as a quote from Ecclesiastes—or read it as ROBERT SILVERBERG telling it like it is when future Man liberates Planet Belzagar—with powerful, timely, down-to-Earth pertinence to "like it is" on Earth today!

DON'T WAIT FOR DOWNWARD TO THE EARTH TO MAKE THE SF BEST-SELLER LISTS AS A NOVEL. READ IT AS A BEGINNING BIG SERIAL IN NEXT MONTH'S GALAXY ALONG WITH OTHER BEST, NEWEST AND MOST RELEVANT SCIENCE FICTION LIKE:

Phyllis Gotlieb's
THE DIRTY OLD MEN OF MAXSEC
Norman Spinrad's
DEAD END
Ron Goulart's
BROKE AND HUNGRY AND NO PLACE TO GO
James E. Gunn's
THE MAN WHO WOULD NOT

PLUS

Robert S. Richardson's factual space-science adventure of tomorrow:

ERSALZ'S RULE

HOW TO KIDNAP A MOON

TAKE THE B TRAIN

The local may bed you
with nine women in one
night—but watch
out for the express!

I

WATER to a reluctant sponge, consciousness seeped implacably into the brain, mind, soul and person of Amos A. Appleby. It was like an incoming tide lapping around a child's sand castle, abandoned on the beach because the time had become cold and dark and everyone had gone back to the hotel, leaving behind, along with the castle, the odd yellow bucket and red shovel, tools of wanton, unformed engineers. Consciousness was now one of the lesser desires of Amos Appleby. A look into his

unconscious would find some ambivalence about his ever wanting to be conscious again.

Let me sleep just one week more...

But the tide takes away the turrets and in the end you wake and see how, it is, where you are. Baby, you say, this is it.

Amos Appleby, fighting the opening of his eyes, called forth the memory, imagery, thought of

ERNEST KEITH TAVES

GALAXY

the girl at his side a million or two years ago, her flesh against his, the world outside the way it had been for a while, with orange juice and croissants and coffee for breakfast, they in robes of many but familiar colors.

Her flesh against his, yes, the warmth of her skin on his. Do you remember knowing this touch for the first time—what it was, how it felt? You have thought of this? All right, then, cancel all that. Think you might never know it again, not ever.

Amos opened his eyes. But you can sleep only so long, no matter how seductive or urgent the prospect. Amos opened his eyes.

SAND the hell all over, dunes, and no oasis in sight. Sport jacket for a pillow and no blanket. The night before when he had (what do you say—landed, arrived?) come here, the stars had confirmed, roughly, his idea of where he was. And what they had suggested about the when hadn't been too bad. He had been worse off before. The where had to be the expanse of nothing called the Sahara—and the when seemed within reasonable limits.

It's not as bad as it could be. I will eventually push the right button...

He tried to huddle back into sleep but he was awake and knew it. He wore the trousers of how-

ever many years ago, or ahead, and he reached into the left front pocket. The jeweler's screwdriver and the hex wand in the leather pouch were still there. He felt in other pockets and found that the notebook was secure, as was the device—that small object about the size of a pack of cigarettes which had once been as innocuous and familiar as his toothbrush standing in the glass where he washed his face before he went to bed, but which now seemed as alien as, say, a pear in a partridge tree.

Sand the hell all over, dunes, and no oasis in sight.

There was enough light now and Amos Appleby brushed aside the remnants of sleep and faced up to doing what he had to do.

TAKE the A train, yes. There's been some music about that. Incomparable Duke. Take the A train from One Twenty-Fifth to Eighth Street, or the MTA from Park Street Under to Harvard Square, and see what's there when you take the UP escalator. Go down the steps at Piccadilly Circus, and come up at Green Park, expecting April sunshine but finding bleak December rain. Enter any door, Amos thought, at your peril.

The beginning had been quite simple. And it hadn't been on the A train or the MTA but on the Paris-Barcelona. Express B train?

TAKE THE B TRAIN

I (AMOS) pushed the button about half an hour out of Austerlitz. I was feeling fine, I wanted a drink and I'd given the porter enough time to get himself squared away. My wife, Helen, and I were headed eventually for Madrid, where she would visit an old friend and I would buy a guitar (a Ramirez). In the meantime we would spend a few days in Barcelona, where I had laid on a few appointments with fellow physicists and where we had a date with Luis and Sonia Fonseca and garlic soup and cochinillo.

I was feeling fine because my laboratory and classes were thousands of miles behind. I'd miss them soon enough. But for now nostalgia was no problem. I was feeling fine because I was clicking through the night south of Paris in a mellow *wagon-lit*, one of the remaining means of travel worth mentioning.

The porter tapped on the door. Neither Helen nor I thought much of drinking whiskey or gin in France. I ordered a bottle of Hennessy and Perrier. The porter was back in a minute and I made the drinks.

We sat on the lower bed, I next to the window. This was understood, I had the greater interest. I sat by the window in planes too. I like to see what's going on outside. We were well

into the gentle farm-country of Loiret, nothing to see but the trucks going toward and away from Paris on the *grande route*, which here paralleled the railroad. The clusters of red, white and amber lights were soothing—ambulatory Christmas trees going here and there in the wrong season.

I moved my head from the window, looked at Helen.

"This," I said, "is great. Why don't we have trains like this in the States any more? You're enjoying the trip?"

There was a nagging, a pulling at me somewhere, making me wonder if I was doing all I was supposed to. I touched her knee tentatively.

She was already into a paperback but she raised her head, that head I knew so well, and we sat there—somewhere near Orleans, must have been—looking at each other. She was pleasant enough, sort of there, not making any fuss.

"Did you bring aspirin or Empirin or something?" she asked.

I reached for my flight bag, rummaged about, taking things out, putting them back. Not the neatest packer in the world am I. But I get along. I found the aspirin, gave her two.

Helen had been watching me.

"For Christ's sake," she said.

"What?"

She reached into my bag and pulled out something.

"I will be damned," she said, "if that isn't the most stupid thing in God's world to be carrying around Europe. Amos. Just what the hell is the big idea?"

Helen talked like that now and then. I filled my glass.

"When I closed the garage door on the way to the airport I was so—excited at the idea of meeting you in Paris I put the thing in my pocket instead of leaving it in the car. It's all right."

I felt in the wrong, errant fourth-grader standing once more on cork tile before the principal's tacky desk. Helen did that to me sometimes. My fault as much as hers—for letting it happen, that is—but still she did it.

What I was inadvertently carrying around Europe was the transmitter that opens the door of my side of the garage in Cambridge. Big deal. I put it back in the bag, made Helen another drink which she acknowledged—though she was again into the paperback—with an air of suffering fools patiently but without pleasure. I drank the Hennessy and Perrier and watched the lights on the road and in the occasional small station we disdainfully rattled through, not stopping.

So what if I'd brought along the garage-door opener? I'm a professor, after all, and the quality of absence of mind is not unknown to my kind—nor to me, specif-

ically and individually, though I am younger than most of my confreres. Big deal. I pulled the gadget again from the bag, looked at my wife, as if daring her to say something.

She doesn't know me. She doesn't know me at all....

For the hell of it I pushed the switch panel, having a wild thought of my garage door dutifully rising on Foster Street in Cambridge. *Home is the hunter*, the door says, but it has been tricked by flea-power milliwatts bouncing too many times between E layer and Earth. If the door opens, my Belvedere—my eight-track stereoed companion and friend—will not be waiting on the ramp. It waits unprotected but not alone in the jungle of Logan airport.

This I was thinking. What happened was something else. Helen's figure blurred, then sharpened. And she had changed her dress.

That was the first thing I noticed. She had been wearing a rather severe suit I won't attempt to describe. Now she wore a tweed skirt and yellow cashmere sweater. Her Hennessy and Perrier, I saw next, had changed to Pernod. Her hair was the same lustrous brown I had always liked—but it was done altogether differently.

And this Helen was not reading. She was sitting there dozing and I knew she was ready for bed.

I did not believe what I saw, of course, but I began to have some notion of what I was dealing with. I replaced—with great care, gently—the instrument in the flight bag.

"Helen?" I said.

MY WIFE, wearing clothes I had never seen before, opened sleepy eyes and looked into mine. And I looked into hers for whatever I could find. Nothing new right off—business as usual.

"I've been asleep?" she asked.

"For a few minutes. Ready for bed?"

What, I wondered, did I think I was asking here—and of whom? I was still I. There was no discontinuity in my history that I knew anything about. But Helen, somewhere, some time, had taken a different track. What if I asked her about the gray suit she had been wearing five minutes ago?

"Did you bring the gray suit this time?" I asked.

"I told you I wouldn't bring any suits this time, Amos. And I don't have a gray one. You can be so damn silly. What do you know about women's clothes anyway?"

I sat by the window. Not much, I said to myself, as Helen slipped out of her garments. That lovely body was the same, damn if it wasn't, but there was something different about non-body

Helen, my wife. I saw it, felt it, somehow tuned in on it, though I could not put my finger on it. I wondered whether to probe the past or the present.

A flimsy black nightgown I had never seen dropped first over her shoulders and then over the rest of her. She dug into her toilet things, preparing for ritual. We slowed for a rustic station. I pulled down the shade and got ready for bed myself. As it worked out, I was ready before she was and crawled into the lower berth, wondering. The trails were clicking smoothly beneath this bed, and there came toward me a woman I did not know but whose breasts and stomach and bottom and all I could describe with inflammatory detail.

"You expect me to climb upstairs?" she asked, not altogether unkindly.

"We could both be here for a while."

"You know I don't like to make love in trains," she said. "And anyway, I'm still sore from the last time."

She was on a different track, all right.

There we were, this strange and desirable woman and, in what I thought was one of the few remaining romantic situations—and she wanted me the hell out of her berth and aloft into mine.

So aloft I went, there to brood.

My wife, Helen, I had (with my door-opener and inadvertently) thrust somewhere into time and space. And here I was with, say, Helen A, who would have nothing of me, not now, though our situation was attractive and I had done nothing to offend. My flight bag was on the rack near my head and as we slipped through the night I thought to retrieve the transmitter, push once, and see what Helen B was like.

Or would she go back to plain Helen again? Not that she was plain, you understand.

I resisted the impulse as a scientist and, instead, cast myself adrift upon a sea of fantasy. Then the *clickety-click* of the wheels on the rails and the gentle swaying of the car took over and I slept all the way to Perpignan.

II

BARCELONA. A town worth visiting, knowing. I spent most of the first day there with colleagues, interested in what some of them were up to but distracted by thoughts of Helen. Helen A. We were to be taken out that evening for garlic soup and cochinillo, I had extracted that promise from the Fonsecas before leaving Cambridge. The last of my several confrontations with colleagues had been duller than could have been expected and, with untidy excuses,

I got out of there at five. I was near enough our hotel, the *Colon*, to walk back. I strolled along the Ramblas, a little worried about the girl I was approaching. I stopped and bought for Helen a bunch of what I took for marigolds.

I stopped again to buy gin and vermouth. I thought to ply my wife, whoever she was, with drink, if necessary, before getting ready for the evening.

When I got back to the *Colon* our room was empty. No cause for alarm. If Helen A were anything like Original Helen she would be out shopping. I rang for ice, then ran a bath, made a magnificent martini and settled into the hot tub.

There was a clicking and turning of a key in the hall door. The bathroom door was open—I had deliberately left it so—but it did not face the room. I could hear what was going on. Helen A was back with enough packages to need a boy's assistance to get them into the room. She thanked him in impeccable Spanish and I heard the door close.

"Hi," I called.

She came in, looked at me in the tub.

"How did it go?" she asked.

"Fine. You?"

"I bought a couple of things. Nice things. The people in the stores are so polite."

"You want a martini? I bought gin and vermouth. For practically nothing, by the way."

"All right."

"Have a sip of mine. I'll be out in a minute and make more." more."

"That tastes good for a change."

"Yes."

The sound track goes about like that but it doesn't communicate. Original Helen and I had had our troubles, God knows, but now I wanted her back, because what Helen A was communicating, though not via the sound track, was — indifference. Distance. Defense against intimacy. There I was, with all due immodesty, spreadeagled in the tub and Helen A's reaction was remote—a voice saying nothing, coming my way from a far space. Original Helen would have done something, said something, reacted this way or that, whether she had any notions for the immediate future or not.

"I want to show you what I bought."

Well, she was female anyway.

"All right. I'll be out shortly."

I wanted to think a minute. "Will you make?"

I handed her my empty glass.

I was thinking about time. This Helen brought me a martini almost as good as the one I'd made.

"What year were we married?"

I asked. "I always forget the year."

"Amos."

She started to say more, to ask a question, whatever. Then she told me and went back to her packages. Her year was two years earlier than mine. So I knew Helen A had been on a different road from Original Helen's for at least ten years, maybe more. And where was Original Helen now? Where, for that matter, was the I Helen A had married? Though the consequences of my pushing the switch in the train had been totally unforeseeable, I suddenly felt guilty. I got out of the tub, threw on a robe and, making interested sounds, looked at things bought.

"I need a bath, too," Helen said. "Do we have to hurry?"

I looked at my watch.

"No. Time for another martini, maybe two."

I had not, I realized, abandoned all hope. When she was undressed I came close and enveloped her from behind. If there was any Original Helen in her at all she would have to respond to this.

She did.

"For God's sake, Amos," she said, withdrawing.

With finality.

She even closed the bathroom door.

My demands are not great but I've never tolerated frustration graciously. I was excited and I was rejected. My guilt feelings were

conveniently receding as well and I pulled the gadget from my flight bag. Am I, I stopped to ask, a responsible scientist or am I not? The hell with it. I jabbed the panel as if it were a punching bag.

"Amos?"

"Yes?"

"Why did you close the door? I need you."

Gentle reproach in her voice. And love, lots of love.

I'll be damned, I said to myself.

"I'm coming," I answered to Helen B.

SHE was blond. She was lovely. There was a look in her eyes, a look Helen A could not have come up with in a hundred years.

"I need you," she said, "to wash my back."

"Your wish is my command," I said. Shook I was, reduced to cliché.

Wash it I did, not stopping with the back either. Things were looking up.

"Ummm," this girl said. "How soon do we have to be ready?"

"I'm ready now."

"I'd noticed."

"We have time."

My goodness. Rembrandt, or whoever it was, was wrong and wrong by orders of magnitude, with that crack about knowing all women if you know one. A painter he was but when the woman boat

sailed away he was standing behind on the shore. I had known all along that he had been wrong but a postgraduate refresher course does no harm.

Lovely, lovely. Lovely.

Then the Fonsecas were due. Neither of us, this Helen or I, wanted to go out for the night, cochinito notwithstanding. But we live in a world of obligation and we had to dress and I had to think of Original Helen. Where was she? I could dispense with Helen A — she did not seem my responsibility, somehow. I knotted my tie, then zippered this Helen up the back. She could do more for a wardrobe.

These girls were all Helens, you know. They had all started out as the same girl, had all been launched a bit back there from the same genetic pad. (Yes, Helen B's natural hair color was the same as that of the other two.) Now I'd known three of them (in respect to Helen A, I don't mean that in the biblical sense), and they were the same and so different. Weird. And all I had to do was push the button. Feeling like God's younger brother, I carefully stowed the gadget where it would not be disturbed when the girl came in to make up the bed.

The Fonsecas were below, then, and while they were coming up to the room my mind's eye scan-

ned a dazzling and mixed array of Helens C through Z, and on into AA and ZZ, continuing—and I knew I had to be with Helen B and the hell with all those others, whoever or whatever they were. And Original Helen was still there, too, poking around inside my head, crying to be let out.

Being a scientist, I resolved the problem for the moment, gave myself some borrowed time by promising that as soon as I was back in Cambridge I would study the gadget—in great secrecy, of course—and play it by ear from there. I was not about to change anything right then.

"Tell me, Luis," I said, "with all due respect to dear Sonia, if you could change one thing about her, just one, and a small thing at that, what would you do? Which button would you push?"

We talked about that, then about how silly I was to bring up such a question.

"Luis," I said later, "tell me something else. Do you think that Sonia knows you?"

I looked from one to the other, then to my wife. She understood, somehow, exactly what was in my head. She knew me.

"Yes," said Luis, after some consideration and a searching glance at his wife. "Yes, she does."

Sonia's smile showed that this was so.

After that we went out for

dinner. In the elevator my wife touched my wrist all the way down. She did not hold it or anything, just touched it. Something generous in me wept for all the poor bastards out there who could never know that touch. And the ungenerous counterpart said, *Keep away, friend, far away — she's mine....*

THE rest of Barcelona was an idyll. So was the train to Madrid. So was Madrid. I found a Ramírez which had obviously been made for me alone. It had been patiently waiting for me in the varnish-scented atelier of a man of genius. It leaped instantly into my grasp and later I played passionately for my wife—and in a Villa-Lobos Prelude (the Third) I was sure I heard Segovia. With this instrument, I said, I can truly talk to God. As—being his younger brother—why not? A time like that.

HUMAN error is what you have to watch for. Maxims of Amos A. Appleby, quoted by permission.

I wrapped the gadget in cotton wool and carried it aboard the Madrid-Boston aircraft as though it, the gadget, were the true Grail. We had a lovely flight most of the way, my wife sitting by the window, her touch on me from time to time. And mine on her.

We ran into turbulence about

GALAXY

an hour out of Logan. The belt sign flashed on and the girls toured the aisle, checking. I was checking dear Helen B when we went into a sickening drop which lasted too long. I should, of course, have been tending to my flight bag. It, along with all of us, was in free fall during the drop but we were restrained and it was not. And whatever it was, the gadget was sensitive.

The fall ended drastically with at least a 2-G tug. My unattended bag hit the floor. I heard it. I unbuckled my belt and dove for it but too late.

Human error.

Yep. Helen A again. I wondered if the girls would notice the different clothes. I certainly did. She was back to skirt and sweater.

"You all right?" I asked, knowing dark hypocrisy within my soul.

"Yes, I'm all right. I hope we don't do that again. Don't you want to sit by the window now?"

"It doesn't matter."

Some voice told me to push the button and keep pushing until Helen B came back. But something else, another voice, warned me.

That way lies disaster....

I listened, although disaster was already mine. I was silent, thinking, the rest of the way into Logan.

Except for a few seconds.

"How do you like my Ramírez?"

rez?" I asked.

"It sounds all right," she said. "You didn't play it much."

III

WHEN we came to the garage on Foster Street I stopped the car on the ramp, got out and opened the garage door with the key meant to be used when the transmitter failed.

"Where's the opener?" this wife asked.

"In my suitcase somewhere. This is simpler."

She sighed.

"You carry that thing all around Europe—where you can't do a damn thing with it—and when you get back home where you can use it, you don't have it."

"Yes, dear," I said.

I think she missed the tone.

I didn't feel safely home, warm and snug, after perilous travels. I felt that perilous travels were about to begin.

"You're irritable," I said unnecessarily. "I devoutly hope you will feel better tomorrow."

She was silent.

I carried the bags into the house. I was very careful with the flight bag and with the Ramírez. Before bed I secreted the gadget in my shop/lab in the basement and released my Ramírez from its case, put it on a stand in my study. My lovely Ramírez, my lovely Helen. One I had, the other

I had not. The Ramirez wanted to be played, I could tell. A guitar with which you can talk to God is more than a little like a loving woman. I apologized for not being able to do it then and touched it softly once—for my comfort.

Tomorrow, I said to my Ramirez, I said to my very deepest self. *Tomorrow and tomorrow...*

Uneasy sleep, I think, is often worse than none. And uneasy sleep was, a matter of course, my lot that night.

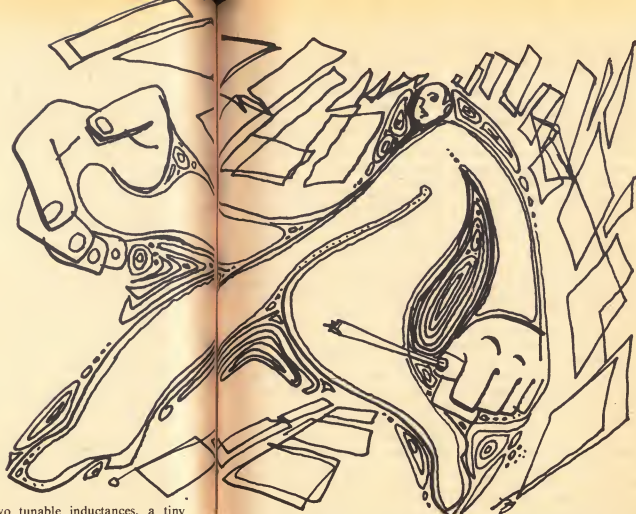
The next day was Saturday. I had time to myself. No need to go to my office or lab. By seven, Saturday morning, I sat on a high stool at my familiar workbench, regarding the gadget. Side by side with it was the opener for the other garage door, Helen's.

I really was a scientist now. Have you noticed that when you go to a good doctor with, say, a swollen thumb, he looks at the good thumb first? That gives him a base. Thus I examined Helen's transmitter first, not the bomb which was mine.

Cheap plastic case, model and serial numbers on a silver label, which also bore a statement of certification about Part 15 of FCC rules. Same legend on both of them—different serial numbers. I saw how the device was meant to be opened. I opened Helen's.

Simple and straightforward.

Two tunable inductances. a tiny variable air capacitor, a dozen miniature resistors, a miniantenna, three transistors and so on—ordinary components mounted on a printed circuit and powered by a



22½ volt battery. A pocket-size broadcasting station. No problem.

With great care I then opened the device that had started this caper and then there were problems galore. Someone had put a

finger into my Belvedere companion—a basic datum which, at this point, came on as no surprise. Problems, yes. Who? How? When? Above all, why? And what was I going to do about answers?

What I saw when I opened the case was a small black cube, fixed irremovably to one side of the case, not occupying much space. A twisted pair of delicate wires led from the cube to the switch panel. A pair of minute brass screws protruded from one side of the cube. A single similar screw was on the opposite side. And through an oval aperture in the face between, I made out a tunable slug, obviously meant to be adjusted with a tiny hex wand.

And that was all. No battery. No visible power source.

In my necessarily gentle tests the cube appeared impermeable, impregnable. I could find no way to take it apart or open it up. I set my multimeter to medium range, thinking to measure the potential across the two poles of the open switch. My meter blew, emitting a gentle puff of smoke.

I had even more respect for the cube after that.

IN THE end there was nothing there for me to understand or not understand — nothing for me to do except push or not push the switch. With or without accompanying adjustments of one or more or all of the four adjustable elements.

I replaced the cover carefully and resecreted the device in a safe place. Safe? Hearing the word rattling round inside my head I

wondered who I kidded. Where did I think safety lay?

I needed to talk. I went up to my study and approached my Ramírez. She was receptive. We did not know each other well as yet but we would. Many are the faces of intimacy. Bach was talking to both of us when the door to my study opened. Helen A, in dudgeon.

"I was sleeping," she said.

The door closed behind her, and the walls of my study rattled.

I'm not much good at flamenco but I played as wildly as I could for a few minutes. I'm not always proud of everything I do. At last I gently replaced the Ramírez and got down to business.

I could, I thought, leave things as they were. But to do nothing would leave me troubled about what I had done to Original Helen, forgetting for the moment — impossible — about Helen B.

Original Helen and I had never really gotten together. My days with Helen B had brought my awareness of what I had missed to razor sharpness. But Original Helen had never been mean or malicious — we had made do with what we had and, in a fashion, we had gotten along. I had cast her adrift, God knew where, through no fault of mine. But what I did — or did not — from here on I couldn't sweep that under the rug.

Impossible to leave matters as they were.

I could push the button a number of times and see what happened. I had known only three Helens so far. Maybe three were all that existed. If I got Original Helen back I could fold the operation right there. I would not feel guilty about consigning Helen A permanently to a different track in her own uptight limbo. But then I thought of Barcelona and Madrid — and of lovely Helen B, who knew me. And it did not seem fair to Original Helen to bring her back and stop there. Not much of my heart would be in whatever came after.

And there was the question of the available adjustments in the transmitter — what about them?

Does my problem begin to emerge?

Relatively minor puzzle: who put the ring in my car and why? Why my car and what was the name of the game? Intelligence test? Tired old game being played by superior folks who were using me like a black rook in a galactic chess game? I did not know. I touched my Ramírez once more and went out to mow lawn, wondering if Helen A was still trying to go back to sleep.

FOR a week I did nothing and that was as long as I could stand it.

We were lying in bed, reading. I had made up my mind earlier in the day and the transmitter was hidden under a pile of papers on my bedside table. Being a scientist, I had a plan. I meant to push the switch ten times exactly, with only enough time between clicks to see what happened — a provision designed to prevent dalliance. If either Original Helen or Helen B came back I would stop the experiment at that point and think about things a while. For in the back of my head was a thought that — if there were not too many Helens out there — I might discover a rotation by whose employment I might happily avoid Helen A, yet still discharge my responsibilities to Original Helen, Helen B and myself.

"Good night — and good luck," I had the courtesy to say.

My wife turned to see what was wrong with me now and I pushed the switch.

Eight women joined me in bed. Original Helen did not appear. Neither did Helen A, which was pleasing, nor Helen B, which was not. Some Helens dyed their hair, some did not. In the first eight were two blonds and a redhead. The redhead was number eight and I was taken aback for the moment, almost departing from scientific plan.

My heart*belonged to Helen B but I said to this apparition,

"Ready for, uh, bed yet, dear?"

"Any time you are, tiger," she said and began to move in.

Wildly conscientious, possibly to the point of insanity, I pushed the switch the ninth time, knowing infinite virtue, feeling like an idiot child.

As it turned out I had second thoughts about letting the apparition go — because when I pushed the switch the ninth time I was suddenly alone in bed. No blond, no redhead, no nothing. Gone to the bathroom?

"Helen," I shouted, beginning to tremble.

Nothing.

Well, I thought, perhaps all was not lost, though such was the appearance at the moment. With enough Helens it was bound to happen. I'd gotten onto a Helen-track where she had died somewhere back there — been killed, something. A hairy situation in any case. The room was quiet and I was alone. I could see myself strangling in some Kafkaesque inquiry into the disappearance of my wife.

Well, it's like this, sir. I had this garage door opener, see, and...

I could see it, all right. Hear it, taste it.

I pushed the switch again, bravely wondering who would show up. Nobody showed up. Forgetting my plan, I flicked that switch again and again until I had

demonstrated to my inquiring and now desperate mind that there were not going to be any more Helens.

Not unless something changed drastically.

I thought of the three tiny brass screws and the tunable slug in the black cube. The experiment would have to proceed on a different track. I had to think, to talk, and I went up to my Ramírez, my steps echoing in what seemed to me now a strangely empty house. There'd been eight lovelies in a row, by God, and now I had none.

I was in deep trouble, possibly catastrophic. And I knew it. But part of me could not get the red-head out of my mind. I was certain that I had missed something there.

I clutched my Ramírez and sought answers to mysteries.

PLAN B went into effect the next day. I did two things which should be noted. I bought a small bound notebook of the kind used by scientists (loose-leaf won't do, for obvious reasons); and I asked my department head for — and got — a week's leave of absence. After that I thought for about twenty-four hours between snatches of sleep and random bits of food.

Late the next night I opened

the transmitter and placed it and the notebook on the bench beside my jeweler's screwdriver and electronic technician's tuning wand.

Earlier — in the bedroom, which somehow seemed the proper site — I had pushed the switch a few more times. Nothing had happened. Now, at my bench, the countdown stood at zero.

I made an entry — the first — in the notebook of what I was about to do, made a micrometric clockwise adjustment of the isolated tiny screw, muttered something to someone or something out there, clutched the notebook and tools in my hand and closed the switch.

Nothing.

Duly recorded.

I turned the same screw in the same direction through as few degrees of arc as I could manage and went through the same routine. I felt something — like a subliminally perceived earthquake. I was scared but the operative thought was — this bird is going to get off the ground.

One more micrometric nudge of the screw, another closing of the switch, a singularly unpleasant vertiginous moment of nausea, and I sat in the abandoned ruin of the basement of what had been my house, my home.

I had loved this place and now it was dead, long dead by the look of things. And I was afraid, yes,

but I thought I knew what I was up to. Fear, excitement, anticipation and nostalgic sentiment were running neck and neck as I sat in the crumbling ruins.

I had thought about the possibilities, potentialities and dangers before opening the case and fiddling with the screw. I had wandered up and down many undisciplined alleys, strolled along a formal boulevard or two and wound up on a quiet residential village street — by which I mean that I had achieved a formulation reduced to basic simplicity but leaving a number of open questions.

Being a scientist, I confronted the unknown across a field of hypotheses.

One — the device is not terrestrial. Where it comes from eludes my grasp and for the moment I abandon interest in that.
Two — I am a test case, a subject, a rat in a maze, a chimp in a cage, trying to reach a banana. I have no hypothesis about what hangs in the balance.
Three — granting hypothesis two, the test is twofold — can I discover how to make the device do my bidding and, if so, what will I tell it to do?

BEGINNING in the ruins of my once house, then, I began to bend that black cube to my will, to show it who would win. My inquiry was exhaustive

and meticulous. I made discoveries. The two tiny screws close together were space (Cartesian coordinates), the solitary screw was time and the tunable slug was people. Simple? No — they interacted and when you changed one you changed them all and had to find a new balance.

I went back and forth a lot — and here and there a lot. The time went as far forward or backward as I cared to think. The space was limited to Earth, apparently, but that still left plenty of room to get lost in. Little turns on the tuning slug brought people into my life, people in whom I had no interest. I thrust them out with my hexagonal wand. I could not find a position that brought Helens back — any Helen — so I left the slug in a null position.

With the three screws, then, I sought a target — and the target was the Paris-Barcelona Express about thirty minutes before this caper had begun. The trouble was that the screws were sensitive in the extreme and subject to a certain amount of backlash. In addition, my hands were not steady.

Understandable?

Hence my undesired appearance in the Sahara.

I was tired as anything and fought off waking as long as I could. But as soon as I knew I was awake I wanted to get on with it. I opened my eyes. Sand

the hell all over, dunes, and no oasis in sight. All right, I had missed by bigger margins before and I felt I was bracketing the target. Baby, I said, this is it. Once there, back on the Paris-Barcelona Express, I thought to retrace the path. There was enough light now. I checked the last notations in the notebook, opened the plastic case once more and reached for the screwdriver.

AMOS APPLEBY made it. Not without incident — but he made it.

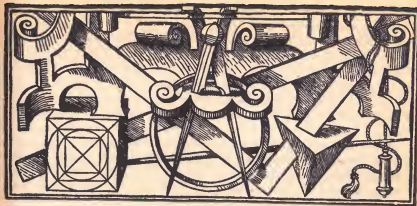
Original Helen reached into his bag and pulled out something.

"I will be damned," she said.

"If that isn't the most stupid thing in God's world to be carrying around Europe. Amos. Just what the hell is the big idea?"

He had the big idea, all right. The question of the eventual disposal, quietus, of the gadget was one he hoped to be able eventually to solve. But the big idea just now was that when he and Helen B ran into turbulence over the western Atlantic, Amos Appleby — with foreknowledge (his wifesitting there by the window) — would be well and truly prepared.

It was not easy, later, thinking ahead, to go to sleep that night, but finally the *clickety-click* of the wheels on the rails took over and he slept all the way to Perpignan. ●



FOR YOUR INFORMATION

Willy Ley

SOMETIMES a fairly minor incident succeeds in being remembered all through life. The one I have in mind deals with a cold day and a newspaper clipping.

When I was in high school it so happened that I had to leave the house before the delivery man brought the morning paper. A classmate of mine who lived some distance away and presumably had another delivery man did get the morning paper in time to read it before he left for school. One day he brought a clipping along which had the headline: "Nitrogen not an Element?" and reported that an English scientist, Lord Rutherford of Nelson, had found that bom-

bardment with small atoms had shown that nitrogen seemed to consist of oxygen and hydrogen.

As soon as our science teacher entered the classroom we raced up to the desk and showed him the clipping. Dr. Borchert, who apparently also did not get his morning paper in time, read it, shook his head and said: "Professor Rutherford is one of the greatest living scientists, but I know that nitrogen is an element."

No further discussion ensued. I never forgot that episode.

Many years later I learned what had actually happened. The "small atoms" of the newspaper story had been alpha particles, the nu-

clei of helium atoms. The bombardment of nitrogen atoms with these alpha particles had resulted in the first transmutation caused by man. Rutherford had succeeded in transmuting a few nitrogen atoms into oxygen atoms with leftover hydrogen atoms. But nitrogen was still an element.

Since then atoms have been split into two roughly equal halves to release their energy, and atoms of elements that do not exist in nature have been made. And a lot of new facts have been learned during the last few years.

For those who do not consciously deal with atoms every day a short refresher course is in order.

The chemical elements are numbered from # 1, which is hydrogen, to # 104, named Kurtchatovium after the Russian atomic physicist Igor Vassilyevitch Kurtchatov, who died in 1960. The numbers are neither in the order of discovery, as a student of mine once guessed, nor are they just arbitrarily chosen for filing purposes. They are based on a property of the nucleus.

The nucleus of an atom is formed of protons, which carry a so-called positive charge, and of neutrons which have the same mass as the protons but do not carry an electric charge. Element # 33 (arsenic) has this number because there are 33 protons in its nucleus. But there are also 42 neutrons present

so that arsenic has the number 33, but the mass 75. For a slightly more complicated case let us look at copper. Its number is 29 because of the 29 protons in its nucleus. But the number of neutrons is not always the same; 69 per cent of all copper atoms have 34 neutrons in their nucleus—hence their mass is 63. The other 31 per cent have 36 neutrons in their nucleus—their mass is 65. There is no chemical difference at all between these two types of copper atoms; they belong in the same place in the table of the elements, under number 29. Greek for “same place” is *eisos topos*, which is the reason why the two kinds of copper atoms are called the two stable isotopes of copper.

Bombardment with subatomic particles can produce unstable (i.e., radioactive) isotopes of any element. But they usually do not survive long and do not interest us here. The heaviest elements that still have stable isotopes are # 82, lead, and # 83, bismuth. The bismuth atom with 126 neutrons in its nucleus, or Bi-209 is the heaviest stable isotope. Everything heavier is unstable and slowly falls apart. It may shoot out an alpha particle which consists of two protons and two neutrons. The nucleus that has just lost an alpha particle obviously is now four units lighter and two number lower in the scale. This is called the “alpha decay.”

The next thing that was discovered was that there is also a “beta decay” which involves a change in one of the neutrons in the nucleus. A neutron may shoot out an electron which carries one negative charge. The result is that the formerly chargeless neutron has turned into a positively charged proton. There is no change in mass (the electron does not count) but the element is now one number higher since it has one more proton in its nucleus.

One more possibility is that immediately after “beta decay,” which raises the atomic number by one, an alpha particle is thrown out, shifting the number down by two. Sometimes two alpha particles are shot out, so that the total shift in atomic number amounts to three numbers. Keeping these various possibilities in mind, Polish-born Kasimir Fajans developed what became known as “Fajans’ rule” which said that a transformation in the nucleus results in a shift (usually downward) of one or two, in some exceptional cases of three numbers.

Since everybody believed firmly in Fajans’ rule, atomic fission, when it took place, was not recognized at first. Nobody thought that an atom could split in two, resulting in shifts of 46 or even 48 numbers, in violation of Fajans’ rule. Fajans himself, incidentally, insisted that his rule had not been violated and that

it still held true. Fission, he said, was something else.

THE statement that bismuth, with the mass 209, is the heaviest stable isotope seems to imply that radioactive isotopes of elements with a number smaller than 83 should all be artificial. However, there are a few exceptions—there are two elements with lower numbers that have no stable isotopes. One of these two violators is # 43, technetium (Tc) which is located in the atomic table below the well-behaved and stable element # 25, manganese. Technetium has 20 different isotopes, all of them unstable, though I find the statement in the isotope list that technetium of mass 97 has a half-life of 2.6 million years—which is pretty stable when compared to the human lifespan.

The other violator in the region below # 83 where one expects atomic stability is one of the rare-earth elements, # 61, named promethium. It has 13 unstable isotopes, the one with the longest half-life is promethium of mass 145. Its half-life is 18 years.

Now we come to the atomic heavyweights with more than 83 protons in their nuclei. Interestingly enough, their masses can be less than that of the stable Bi-209. The lightest isotope of the next element after bismuth, # 84, polonium, has a mass of only 196, with a half-life of 1.9 minutes.

TABLE 1 — RADIOACTIVE ELEMENTS NOS. 84 TO 104.

No.	Name and Symbol		Number of known isotopes	Isotope with longest half-life
84	Polonium (Po)		24	Po-209:103 years
85	Astatine (At)		20	At-210:8.3 hours
86	Radon (Rn)		16	Rn-222:3.825 days
87	Francium (Fr)		8	Fr-223:22 minutes
88	Radium (Ra)		13	Ra-226:1620 years
89	Actinium (Ac)		10	Ac-227:22 years
90	Thorium (Th)		15	Th-232:13,900 mill. yrs.
91	Protactinium (Pa)		13	Pa-231:34,000 years
92	Uranium (U)		15	U-238:4500 mill. years
93	Neptunium (Np)		13	Np-237:2.2 mill. yrs.
94	Plutonium (Pu)		15	Pu-244:76 mill. yrs.
95	Americium (Am)		11	Am-243:8000 years
96	Curium (Cm)		13	Cm-245:40 mill. yrs.
97	Berkelium (Bk)		8	Bk-247:10,000 years
98	Californium (Cf)		13	Cf-251:800 years
99	Einsteinium (Es)		10	Es-252:140 days
100	Fermium (Fm)		14	Fm-257:71 days
101	Mendelevium (Md)		7	Md-258:61 days
102	Nobelium (No)		6	No-255:3 minutes
103	Lawrencium (Lr)		2	Lr-256:45 seconds
104	Kurchatovium (Ku)		4	Ku-257:ca. 5 seconds

NOTE: Nos. 89-103 form the "family" of the actinides.

All the elements from # 84 to # 104 have one thing in common — they have no stable isotopes. They are not alike otherwise. Chemically speaking # 94, plutonium, differs considerably from # 88, radium. In sequence we have five radioactive elements, from # 84, polonium, to # 88, radium, that differ from each other chemically, just as the lower-numbered stable ele-

ments differ from each other chemically. Then we have a "family," from # 89, actinium, to # 103, lawrencium, which Glenn T. Seaborg called the "actinides" from the name of their first member. These fifteen elements are chemically much alike, in the same manner as the fifteen "lanthanides" or rare-earth elements are chemically much alike. Element # 104, Kurt-

chatovium, is right now the only known element beyond the actinides.

The question is, of course, whether there are more elements beyond Kurchatovium, but another term must be explained first. All the elements with numbers larger than 92, uranium, are called "synthetic elements" ¹ because they are not found in nature but had to be made in the laboratory by shooting comparatively light nuclei into heavy nuclei, hoping that a still heavier nucleus would be the result. The term "synthetic" ignores the question of whether the element is a member of the actinide family or not. It simply points out that these elements do not exist in nature. Some, or all, may have existed in nature in the past.

A glance at the table shows that the half-lives beyond # 97, berkelium, shrink rapidly. For # 98 the longest half-life known is still 800 years, for # 99 it is down to 140 days. For # 100 it is about half of # 99, namely 71 days, for # 101 it is only 61 days. The next one, # 102 is down to 3 minutes, # 103 to 45 seconds and # 104 to 5 seconds. Does that mean that # 105, when it is made, will show a half-life of maybe half a second?

Very likely — but not necessarily.

But a few words must be said about # 104 before we can discuss the elements numbered beyond it.

The Russians who claim to have made # 104 first and who have named it (the name is not yet internationally accepted) apparently found isotope Ku-260 which had a half-life of one third of a second. The other three isotopes with masses of 257, 258 and 259 were made at the Lawrence Radiation Laboratory at Berkeley. Of these, the isotope with mass 258 has a half-life of one hundredth of a second. The one of mass 257 decays into # 102, nobelium, by emitting an alpha particle; its half-life is between 4 and 5 seconds. The one with mass 259 also turns into nobelium (another isotope of it) by alpha decay; its half-life is between 3 and 4 seconds.

In the investigation of the heavy synthetics an interesting and new phenomenon was observed: spontaneous fission. The well-known fission of uranium-235 and of plutonium is brought about by neutron bombardment: the nucleus that absorbs a neutron falls apart. For heavier elements the fission process occurs without a known cause — but nature has provided an interesting hint. Those isotopes where both the number of the protons and of the neutrons are even are most susceptible to spontaneous fission. The list we now have, no doubt incomplete, reads:

¹ Numbers 43, technetium; 61, promethium; 85, astatine and 87, francium, are synthetic elements, too.

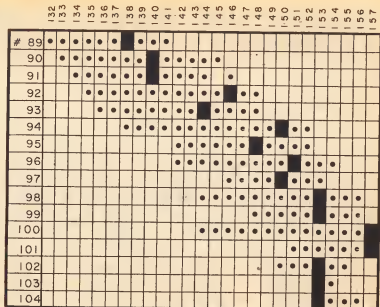
TABLE 2—THE TWO BOTTOM ROWS OF THE PERIODIC TABLE AS THEY NOW APPEAR

THE ACTINIDES

87	Francium	(Fr)	55	Cesium	(Cs)
88	Radium	(Ra)	56	Barium	(Ba)
89	Actinium	(Ac)	57	Lanthanum	(La)
90	Thorium	(Th)	58	Cerium	(Ce)
91	Protactinium	(Pa)	59	Praseodymium	(Pr)
92	Uranium	(U)	60	Neodymium	(Nd)
93	Neptunium	(Np)	61	Promethium	(Pm)
94	Plutonium	(Pu)	62	Samarium	(Sm)
95	Americium	(Am)	63	Europium	(Eu)
96	Curium	(Cm)	64	Gadolinium	(Gd)
97	Berkelium	(Bk)	65	Terbium	(Tb)
98	Californium	(Cf)	66	Dysprosium	(Dy)
99	Einsteinium	(Es)	67	Holmium	(Ho)
100	Fermium	(Fm)	68	Erbium	(Er)
101	Mendelevium	(Md)	69	Thulium	(Tm)
102	Nobelium	(No)	70	Ytterbium	(Yb)
103	Lawrencium	(Lr)	71	Lutetium	(Lu)
104	Kurchatovium	(Ku)	72	Hafnium	(Hf)
105	eka-Tantalum		73	Tantalum	(Ta)
106	eka-Wolfram		74	Wolfram	(W)
107	eka-Rhenium		75	Rhenium	(Re)
108	eka-Osmium		76	Osmium	(Os)
109	eka-Iridium		77	Iridium	(Ir)
110	eka-Platinum		78	Platinum	(Pt)
111	eka-Aurum		79	Gold	(Au)
112	eka-Hydrargium		80	Mercury	(Hg)
113	eka-Thallium		81	Thallium	(Tl)
114	eka-Plumbum		82	Lead	(Pb)
115	eka-Bismuthum		83	Bismuth	(Bi)
116	eka-Polonium		84	Polonium	(Po)
117	eka-Astatine		85	Astatine	(At)
118	eka-Radon		86	Radon	(Rn)

THE LANTHANIDES

The left-hand column represents the bottom row of the atomic table; everything preceded by "eka" is not yet actually known. The right-hand column is the row just above the bottom row, indicating the chemical resemblances one can expect if any one of the "eka" elements lasts long enough for chemical experiments.



ACTINIDES AND HIGHER

The numbers to the left are the atomic numbers (number of protons in the nucleus) while the top row of figures gives the numbers of neutrons in the nucleus. Black dots in the squares indicate that the isotope has been identified; blackened squares give the isotope with the longest half-life of each element.

- Cm-250 96 protons, 154 neutrons
- Cf-254 98 protons, 156 neutrons
- Fm-256 100 protons, 156 neutrons
- Ku-258 104 protons, 154 neutrons
- Ku-260 104 protons, 156 neutrons

half-life of even one day is most unlikely (one does not say "impossible" any more). But beyond # 108 an area of relative stability might be reached again, though these elements would still be radioactive.

If the list is meaningful, element # 106 with mass 262 should be especially short-lived because of spontaneous fission, because its nucleus must contain 106 protons and 156 neutrons.

That any isotope of the elements from # 102 to # 108 will have a

The second table shows how the bottom rows of the Periodic Table are now arranged. It shows how the actinides correspond to the lanthanides (rare earths) and how the elements # 104 to # 118 are expected to correspond to the elements # 72 to # 86 above them in

the Periodic Table. Glenn T. Seaborg expects that if experimenters ever progress beyond # 118, the next bottom row will begin with # 119 and # 120, corresponding to Francium and radium and that a series of "super actinides" will follow.

As for the still undiscovered, or rather not yet made, elements in the current bottom row a few things can be said. Element # 118 will be one more member of the family of the "noble gases." West German researchers expect that eka-platinum might have a reasonably stable isotope of mass 269. But hopes run highest for # 114 below lead. It should be quite stable which in this case means a half-life of a hundred years or so.

The Russians are engaged in an interesting hunt for this element right now. In nature, elements that are neighbors in the Periodic Table often occur in association, which means that lead might contain traces of # 114. It would, of course, have decayed, but such decay leaves traces in suitable materials — glass is one of them. Therefore the Russians are looking for old leaded church windows, old lanterns where lead was used to hold glass in place. They are not examining the lead but the glass for traces of the decay of element # 114 that may have been present in the lead. So far the search has not been successful.

But surprises are possible any day of the week, including Sundays.

Sometimes I feel that the public does not have too much trouble swallowing the Space Age but that it chokes on the vocabulary. Recently a radio announcer, in discussing the flight of Apollo # 10, must have used the term "albedo" with regard to the moon and a listener wrote to me asking what it meant, adding that it sounded like an Arabic word.

Now not every word beginning with "al" is Arabic; in this case the root word is straight Latin, namely *albus* which means "white" (hence albino). The term means the "whiteness" of an astronomical object that is without luminosity of its own.

Albedo is defined as the ratio of the amount of light reflected to the observer to the amount of light received by the diffusely reflecting object. The word "diffuse" is necessary here because the term albedo does not apply to a mirror or mirrorlike surface. Such reflection would be "specular" reflection, from Latin *speculum*, which means mirror.

Now that we have the definition behind us, let us get down to a few cases. The brightest of the
(Please turn to page 113).

STELLA



No man saw farther than Ermish,
found a girl lovelier than Stella,
or gave a gift so priceless . . .

DANNIE PLACHTA

ERMISH stood at the farthest tip of the Nether Cape in the Land of Many Names, his head raised into the ebony wind, remembering long remembrances of an amber-tinted star framed in softest

velvet, which had once stood casting gentle shadows onto polished emerald eyes and which had been the most beautiful thing he had ever known.

It had been a full hundred turns

since he had seen the Last Star and he waited patiently now in this late turn of the Second Season, knowing that the ancient charts were never wrong. Lerna would not join him in the traditional Firstwatch and he pondered upon her strange behavior. Six times she had shared with him the first sighting of the Last Star as it had arced above the forever invisible horizon and each time he had turned to see the first lighting of her eyes.

"Not this time," she had said and she had meant it.

He remembered, too, so many, many turns ago—when he had seemed no taller than the shimmering patches of wild flickerlilies that had occasionally colored the inland hills—how he had seen yet another star rise above the cape. That star had never returned but he knew that it had been very bright and very, very blue.

"How strange," the watchers had said, for no one had ever seen it before and it had never been found on the charts.

"Lerna saw it, too," Ermish whispered into the wind and wondered what the blue shadows might have done to her eyes.

Those eyes would now be lidded by the weight of heavy purple lashes, he was just thinking, when his comset tinkled against the whirling of the wind.

"Ermish speaks," he said, pull-

ing the jeweled box from his belt and raising it near his face.

The tiny comset hummed, cracked and said, "Has it come?"

"Oh? The Last Star?"

"No," said the box, laughing quietly. "Your Blue Star."

His eyes squinted, swept a black area that might have held a horizon. He relaxed.

"The world remains dark."

"Then may your Blue Star cast early shadows."

"Lerna, why aren't you sleeping?"

"I tried," she said. "There was a news report earlier. Something about technical difficulties at the Surface Sourceplant."

He laughed.

"They've been having technical difficulties there since the First Turn."

"Yes, but if anything ever did go wrong with anything up there..." A pause within his hand hummed quietly. "Perhaps you should come back down."

"Such a serious Lerna," he said, smiling. Then, solemnly: "It's here."

A point of amber stabbed the wind.

"Come down!"

"Lerna, I do wish you were here."

"Now!"

"Don't be silly, Lerna." He was about to add: *I'll be down in a little while...* until he sud-

denly realized that the comset was dead within his hand.

Women are like the Five Winds...

He sighed, slipping the box into his belt.

Without removing his gaze from the Last Star he sat down upon the shallow sand of the cape. The star was as exquisite as the hundred-turn memory he had held but he was vaguely saddened by ghostly thoughts of polished emeralds.

His head tilted back slowly as the lonely star climbed.

A CRUNCHING of sand came at his side and Ermish turned his head in the dark.

"You did well to find me without a torch." He felt the sand shift slightly and reached out a hand. "Yes, please sit by me—I wish to see your eyes, as sleepy as they might be."

A small hand clutched his but his narrowed eyes searched in vain for twin pinpoint of amber at his side.

"You really must be sleepy," he said, as the sand slipped again and their bodies touched.

"Hello," said a voice in Ermish's ear so softly that it was almost swept away by the wind. "I'm Stella."

"Oh," said Ermish.

He tried to free his hand but somehow could not. The wind

was slow thunder within his ears.

"You don't know me," cautioned the voice, perhaps more softly than before.

"I'm afraid I don't," he said.

"The wind increases," he added.

"I came from very far," the voice whispered, "to see you."

"From beyond the inland hills?"

"Far beyond."

"Perhaps from the Denizen Dens, to better view the First-watch?"

"From far beyond the Denizen Dens—to see you."

The air was suddenly calm.

"Well," said Ermish, wondering. "And from what source did you learn of me?"

"I learned of you just tonight."

"What is 'tonight'?"

"It doesn't matter. I learned of you just this late turn."

"Then—are you from the Land of Many Names?"

"My land has but one name and its name is 'Old.'"

"I'm afraid I've never heard of it."

"You would like it, I know."

Her voice was more distinct and the wind was a tender whisper.

"Sometimes it's all amber, with emerald tiles to walk upon."

"Oh," said Ermish.

"You would like it," she said again.

"Now tell me about yourself."

"I am just lately a woman and

they say that I am fair and my hair is long and of velvet."

She whispered a laugh or, perhaps, a giggle.

Ermish smiled and found that her hand was held more tightly within his own.

"And why did you journey this far to see me?"

"To ask you for your sourcebox."

The wind stirred, shifted, grew stronger.

"I cannot survive for long without it."

"Yes, I know."

"A small portion of a turn at best."

"I shall return it soon—if only I can."

"Ever since our Lord Sun died, so many turns ago."

"It isn't just for me." Her hand gripped his very tightly. "We just want to see it—if only we had known sooner."

Ermish tore his hand free from the girl's. He reached into his belt. Suddenly there was light.

He looked to his side. He saw nothing there but the sand of the cape, quiet in the wind.

Reaching out, he felt the girl's warm arm. Listening carefully he heard her short breathing, barely audible above the wind.

"You shouldn't have done that," she said. And: "I'm sorry."

Ermish felt for her hand, found it.

"I don't understand."

"There isn't time." She was quietly pleading. "Please, Ermish, your sourcebox."

With his free hand he reached back and slowly unscrewed the sourcebox at the nape of his neck and he felt the wind chill his spine. Swiftly but carefully he pushed the box toward the invisible girl. The wind stirred at his side and the crystal cone disappeared.

"Thank you. I hope that there is time."

"May this sourcebox wear well with you."

He shut off the torch, returned it to his belt.

The girl took her hand out of his.

"I'll try to return soon."

Her lips touched his cheek, softly and yet firmly. With a rustle of the wind he knew that she was gone.

He looked up and saw the Blue Star. He blinked and it was gone.

Ermish was staring at the Last Star when his comset sounded.

"Ermish speaks."

"Are you all right?"

Lerna, I gave my sourcebox away. To a lovely young girl. I'm sorry."

"The Blue Star."

"Yes."

"I felt—a feeling," said the night within his hand.

"She was—beautiful."

"I know."

"She may return in time," he murmured into the wind.

"I'll give you mine."

"No."

"Then may your Blue Star cast early shadows."

"May your sourcebox wear well with you." He held the comset more tightly, more closely, near his face. "And now I think that I shall—wait here."

There was a long moment of whispered crackling, almost the sound of shattered spray in the wind, or that of the flicker-lilies when they had twinkled upon the inland hills, until he realized that only the whirring of the wind remained.

He breathed the air as if partaking of the ancient ceremonial Breathing of Smoke and, craning his neck, looked upward.

The Last Star was nearly at the zenith when it suddenly flared, flickered, faded and was gone.

Ermish stood at the furthest tip of the Nether Cape in the Land of Many Names, his head bowed into the ebony wind, remembering long remembrances of a velvet-haired girl, framed in softest amber, who had once stood casting gentle shadows onto polished emerald tiles, and who had been the most beautiful girl he had ever known.

(Continued from page 108).

planets in the sky is Venus—but Venus is not the planet with the highest albedo. It is, surprisingly, Uranus with 0.93. The next highest albedo is that of Neptune with 0.84. Venus runs third with 0.76. Then comes Saturn with 0.69 and Jupiter with 0.67.

The albedo of the earth is 0.40 and that of Mars 0.16. Our moon, no matter how bright it may look in the night sky, has an albedo of 0.07—it reflects only 7 percent of the light it receives from the sun.

But while the low albedo of our moon may be surprising to many, this does not mean that all moons have a low albedo. The albedo of the larger moons of the outer planets has been measured thus:

MOONS OF JUPITER

J-I	Io	0.54
J-II	Europa	0.73
J-III	Ganymede	0.34
J-IV	Callisto	0.15

MOONS OF SATURN

S-III	Tethys	0.77
S-IV	Dione	0.66
S-V	Rhea	0.30
S-VI	Titan	0.24
S-VIII	Japetus	0.15

The four larger moons of Uranus are estimated as 0.7 while Triton, the larger moon of Neptune is estimated as 0.32.



FOR one reason or another, lately, I've been thinking about what I'm doing. This is something of a step for me, since I did go a considerable time without ever stopping to wonder systematically about what makes a book — and then what it is that a person such as myself does in relation to it. Time having come around to this particular graduation, however, I thought I would share some of my attendant thoughts.

The Island Under the Earth,
Avram Davidson

Out of the Mouth of the Dragon,
Mark S. Geston

Well, first of all I naturally mean "novel" when I say "book." If I mean anything else, I habitually follow the custom of modifying in particular, as in "This is a non-fiction book," or "This is a book of short stories." If someone hands me a plain brown wrapper containing what he calls a book, I expect a novel.

I think this is because most of us are educated to think of a book as something more than casual; a physical format denoting special merit acquired through notable effort, if you will. And in science fiction, or in any other class of imaginative literature, we tend to equate notability and serial complexity. (John Collier's short stories are "clever." Stephen Vincent Benet's breathtaking star is already sinking below the popular literary horizon. Henry James, however, is reputed a noteworthy literary figure. Yet among these three men whom I'd consider well matched in most qualities of mind, learning, and skill, James remains considerable as the — usually unread — creator of *The Turn of the Screw*, while Collier remains "clever" *ibid.* and Benet remains largely in the hearts of even some few of those who've read *James Shore's Daughter*.) What I mean to say is that I can't escape the syndrome either. If it's short and complicated it's one thing, and if it's long and complicated it de-

serves a thousand words of assiduous inchworming, at my hands or at least at somebody's. Yet there is more in "Jacob and The Indians" than there is in all we know of James Fenimore Cooper (not that I hope to shock you), and "The Devil George and Rosie" vaporizes most of Nathaniel Hawthorne, to name another barreled fish.

Furthermore, you and I have but to look at the sf reading list over any length of time to discover that a great many books are being published as novels which are in fact excuses for broadsiding a cover with a price engraved on it. You know this, I know this. And yet with each new novel yet another fifty or sixty thousand words come into this world with a little freight of stolen prestige and pre-empted bona fides.

Why is this, you ask. And what does it all mean to us here?

Well, this is because like all people we confuse the expression with the inspiration. We look at the novel and we can see the long series of encodings; the blips, arranged in order of precedence, with which the laboring creator spells out his version of what flashed into his mind when the lightning struck him. Think, you say to yourself, of the potential for error; for getting some of the signals wrong, or for getting their precedence out of whack. Consider the chances of

losing focus on the thread of sense being unreel through the labyrinth of options. What a task! And what a triumph when accomplished!

And yet — think, now. When the lightning strikes the short-story writer, does it take less time than a split second? And when the novelist holds the mirror up to his flash, is his task really qualitatively different from that faced by the fabulist?

The thing that happens to any creator, it seems to me, happens in an instant. The rest is translation. This fact makes a well-told, meaningful novel a thing of great merit, for the creator is then a master craftsman as well as an artist. A well-told tale of nothing special is something else again and a fumblingly told tale of something wonderful tends to cast grave doubt on the quality of the wonder.

What does all this mean to us here, *ibid*?

Well, I haven't formed an opinion worthy of graving in tablets of stone, but we all know, I think, the constant pressure in modern sf to produce books, meaning novels. We can see, I think, the books by creators who feel compelled to describe arbitrarily the lightning flash at length, and the books by craftsmen who, having no other present recourse, appear to be working with tired fireflies in a jelly jar.

I would not tell you the novel is inconsiderable. The novel is the pinnacle of our heritage in literature. I would not tell you that short-story writing ought to be better supported or that it isn't well supported now. It should be and I guess it is. I would address the paradox on another level; thusly: A being qualified to live with lightnings ought to respect the sole source of its consciousness.

AVRAM DAVIDSON'S *The Island Under the Earth* (Ace Special # 37425, 75¢) is the first volume in a trilogy and one ought to reserve judgment. But it's unlikely Ace will issue the three-volume set in any practical length of time and, besides, I enjoyed all but a very few things in this book, notably the ending. The ending is very poor — a blatant copout on a one-line gag which, one hopes, will some day be erased in some beneficial cataclysm. Surely it has nothing to do with what went on in Avram's mind when this creation first struck its crystal hooves upon the sharp flints of his talent. I guarantee your disappointment.

However, (and I've found that I've said this too many times, about too many books, now, but here is the Everest of these Himalayas) the source of this real grudge against the book is the book's captivating excellence.

Its locale is that place below

the Earth — or maybe perhaps below the world, the distinction being the same as the distinction between the brain and the mind — where the stars form constellations of webbed lines and the inhabitants are not quite sure of which life is master of Creation. Certainly there's sharp rivalry between the six-limbed folk and a form of life which closely resembles human beings. But there's a harpy who'd grumble quite convincingly that there's more to it than centaurs. Or you could always go ask the homophage.

This is a fine old adventure story. In common with all other men, Captain Stag is aware that things are a little beyond him. Captain Stag being an uncommonly able man, however, it angers him that, no matter what, things are always a little bit beyond him and yet he lacks the excuse of ineptitude. So he seeks the answer to what makes things the way they are. In seeking it he runs counter to or across the purposes of similarly motivated folk of various persuasions and shoe sizes. And of course some of his moves win him extra turns, while others impose penalties. And so we follow him in his search for the legendary Cap of Grace and attempt to guess ahead of him, and of kindly Uncle Av, what will befall him and us next.

The difference between one of these stories and the next is always

in the soul of the creator. The storyline is as simple as it is Grimm, and especially lately there is no shortage of publishers for it. Too, it's almost uniquely true that the degree of the reader's eventual enjoyment is in direct and swift relationship to the author's degree of loving involvement as he spins out the yarn. Since the landscape has no counterpart in reality, and the odd bits of stock legend and standard education cannot be borrowed too blatantly or too continuously, what else has the writer to draw on but the vista of his dreams? I say it thus takes a rich, wise man to write one of these things properly, and then one generous enough to share his wealth.

Gee, what a crummy ending! Bad ending, Avram. Say, Terry, that's a disappointing ending on *The Island Under the Earth*.

It's a good book. Good. Good novel. Waiting for the rest of it. Yes. Wish you had brought it out all in one. Suspect it would be superb.

OKAY. From one legendary format to another. Hey, presto.

It will certainly happen. In the end we will grow so weary of it that we'll believe we're damned unless we stage the conclusive Armageddon. And so, to save our souls, we will flog ourselves to

weary death, leaving the survivors to curse their ineptitude.

This world and mood are brought to —I was going to say 'life,' was I?— by Mark S. Geston, who used to be the author of *Lords of the Starship* and is now the author of *Out of the Mouth of the Dragon*. (Ace # 64460. 60¢)

The easy way to explain Geston's evolution between these two books is to recall that he's young. That makes it easy. Whereas *Starship* was episodic, fantastic in precisely the same way as a C.L. Moore story from the Northwest Smith days, and compulsive, this book concentrates quite well on one individual and his viewpoint, but is still a little choppy. As far as I can determine there is no fantasy in it—there is, instead, some nightmarish technology—and more than a passing evocation of the younger Philip K. Dick. Somehow, this calls to mind the effect on C.L. Moore's stories of her marriage to Henry Kuttner, and this, in turn, makes me realize one could write a pretty monograph on the debt Phil Dick owes to Kuttner. What I'm saying—again—is that Geston immediately makes you start thinking in terms of very good company.

But now back to our message. Compulsive. In *Starship*, you will recall, the generations-long effort to rebuild the relic of the past is frustrated in a climactic

wassail of destruction which the book explicitly ascribes to the influence of the Forces of Evil.

Now, this is fine in terms of a young writer seeing a vision and wanting an excuse for it. But what is made plain in *Dragon* is that you don't need any such simplistic explanation; the necessary impulses are to be found quite near the bone in even the holiest of men. One can only assume Geston has been growing up. He explicitly incorporates the *Starship* episode in the history he relates here, but he also explicitly denies the malign phantasms of the earlier book. He does this latter thing in two ways, one stunning and the other acceptable:

First of all, Amon VanRoark, the viewpoint character, encounters repeated examples of prosthetic technology so fine that the dead don't clearly die; for instance, one of his principal mentors in his wanderings around the war-blasted, hag-ridden, self-devouring world of interminable erosion is a man who begins to make even more sense after his brain rots and his artificial larynx is free to speak at random. Apart from being a piece of invention that anyone might envy, this is pretty obviously intended to be an author's signal to the discerning reader that all the ghost stuff in *Starship* is hereby superseded. I can make this brilliant and arbitrary literary

judgment because Geston also fills his book with other signals that tell us he believes in signaling the reader.

I won't weary you with a list of the symbols placed throughout this work. (Not having kept one. Lazy.) The brilliant beetle that expresses itself by eating its own bowels will do as well as any single instance would, I guess, although you might prefer the lizard that has gotten into priestly garments by the straightforward expedient of eating its way into them.

(So who told you this was a book for the little old lady in Bettendorf?)

Anyway. This gray odyssey follows Amon VanRoark from his youth in a particular decaying city through a series of episodes around the twitching, ghastly world of the future and finds him returning, a neither more nor less sad but not

THE MORE SPACE, THE MERRIER!

In last month's GALAXY, it was stated that *Dune Messiah* would be concluded in this issue. That announcement was overly optimistic. When you start reading on the following page, you will eventually discover that the current installment does not take you to the conclusion of the novel. Actually, it will conclude in GALAXY's November issue.

This situation came about be-

even wiser man to the abandoned ruins of his maturity. He is mad as a hatter, of course; the question is whether he was sane even when we first glimpsed him, and I suppose the larger question then is whether the world was ever sane, even as far back in his past as our time.

One might hope that Geston is not going to spiral up his own *geist*. One might point out that a good thing to try next time would be to write a story in which the viewpoint character has at least a slight influence on the events around him, rather than simply turning out the lights after work. But this book too is a novel, and Geston is a creator, and that, my friends, is item # large in my continuing list of proof that we've got a renaissance going here. Funny it should involve a book like this. Where have all the flowers gone?

cause a wealth of material reached your editor's desk all at once. Rather than deprive readers of any of it, the decision was made to finish *The Dune Messiah* in two installments rather than one—thus making space for the inclusion of deserving stories that otherwise would have been crowded out.

By the way, this marvelous *Dune* novel will shortly be appearing as a hardcover book (Putnam) and as a paperback (Berkley). Enjoy it!

—EDITOR



FRANK HERBERT

DUNE MESSIAH

WHAT HAS GONE BEFORE

Dune was an arid planet, inhabited by gigantic sandworms and wild Fremen whose customs were based on water scarcity. Its only resource was melange, an addictive drug produced by the worms. This "spice" aided longevity and gave an adept visions of the future.

After the murder of his noble father, PAUL ATREIDES was dumped into the desert, together with his pregnant mother, the LADY JESSICA, who had been trained by the Bene Gesserit—a

female order devoted to mental arts and the control of genetic lines to produce a "kwisatz haderach," a messiah capable of using psi powers. Paul was to be their key to this.

In learning to live with the Fremen, Paul was forced to take an overdose of drug. This opened his mind permanently to the future—or futures. Lady Jessica also took an overdose with the result that ALIA, Paul's sister, was born with full knowledge of all her mother had known.

Paul, also known as MUAD'DIB, eventually led the Fremen against the Harkonnen rulers and their Sardaukar soldiers. In the battle, Paul's old friend and teacher, DUNCAN IDAHO, was killed. As ruler, Paul took the Harkonnen heir, PRINCESS IRULAN, as his consort. But he refused to consummate the marriage, remaining true to the Fremen woman CHANI.

Now twelve years later, Paul has made the desert bloom and he rules a mighty empire of stars. He has become almost a god to the Qizarate, a cult built around his visions. Against it, the other quasi-political, quasi-religious forces of humanity have just begun to unite.

Among these is the Bene Gesserit, headed by the Reverend Mother GAIUS HELEN MOHIAM, working through the weak help of their trainee, Princess Irulan. More or less with them is the Bene Tleilax, supposedly amoral scientists; their representa-

tive is the Tleilaxu Face Dancer SCYTALE, who can look like any man or woman. The two groups have the aid of the Spacing Guild, which must control the melange trade, since only spice visions make interstellar navigation possible. Their Steersman EDRIC is more fishlike than human and must live in a tank. His main function is to obscure Paul's visions with his own gift so their plotting will not be detected.

They send Princess Irulan back to Paul to demand he give her an heir; she has so far kept Chani sterile by adding drugs to the Fremen woman's food. Paul refuses. He is filled with bitter visions, unsure but that he is the very instrument of the future he tries to avoid. He is sure, however, that a royal heir by Irulan will destroy all hope.

Paul detects the Reverend Mother on Edric's ship and has her arrested. But Scytale and BIJAZ, a created Tleilaxu dwarf, escape.

Scytale secretly visits a Fremen quarter to gain information. He leaves Bijaz behind but takes with him the semuta-addicted daughter of OTHEYM, a bitter old desert fighter. Her name is LICHNA.

During an interview with Edric, Paul learns nothing. The presence of the Steersman muddies all his future visions. It also upsets STILGAR, his minister of state, and KORBA, head of the Qizarate. Paul can only determine that the Reverend Mother has suggested that Princess Irulan have Chani

killed, since Paul's mate now refuses the food containing the steril-ity drug.

Edric then makes Paul a shocking present—something that looks like Duncan Idaho, except for metallic eyes. It is a ghola—Duncan's body has been regrown from its cell patterns by Tleilaxu science. But it has no memories from its former life and is now named HAYT. Paul is disturbed by the fact that he saw no vision of Duncan's return. He asks the purpose of the gift, and Hayt answers: "I have been sent to destroy you." But Hayt does not know how it will come about. He tells Paul to send him away—but Paul cannot, since Duncan was once so close to him.

Alia is sent to study the body of a girl found in the desert. She can learn little, except that the corpse shows signs of semuta-addiction, but she is sure it indicates some grave danger. On the way back, Hayt reveals signs of being the real Duncan Idaho, and she is attracted to him in spite of herself. When he kisses her, she protests; but he tells her he only did what she wanted—and she realizes he is right.

On the verge of new struggles of empire, Paul finds nothing going well. There are reports of treason among the Fremmen and an attempt to steal a worm and develop melange on another world—but which world Paul cannot see. He grows more worried as his visions grow more and more confusing. He constantly sees a moon falling—some highly personal symbol of

disaster; the meaning eludes him.

Paul sees the Reverend Mother Mohiam and tells her that Chani is now pregnant. For peace from her, he promises that Irulan may have a child by artificial insemination—but not an heir to the throne. Upset, she agrees to wait while she consults her order.

But it is no victory. Paul admits to the ghola—who is becoming more and more Duncan Idaho—that he knows birth of an heir means Chani's death; there are problems because of the years of secret contraceptive. But he can do nothing.

Otheim's daughter Lichna—really Scytale in her form—appears with a message that Otheim asks Paul to come to him, since he has information on the traitor Fremmen. Paul knows it is Scytale, but the future demands he act as if it were really Lichna. He is not encouraged when he visits one of Alia's religious ceremonies for the pilgrims; under an overdose of melange, she sees what he fears.

At Otheim's house, he meets Bijaz—and gets another shock, since there was no dwarf-ghola in his vision! Otheim speaks bitterly of treason, but says the dwarf knows the names of the disloyal. He gives Paul the dwarf as Paul leaves. Outside, Paul turns Bijaz over to Stilgar and begins directing the search for the traitors.

Then a blast of radiation strikes the searching troops. It is a forbidden "Stone Burner"—an atomic bomb in which the type of radiation can be adjusted.

XVII

The convoluted wording of legalisms grew up around the necessity to hide from ourselves the violence we intend toward each other. Between depriving a man of one hour of his life and depriving him of his life there exists only a difference of degree. You have done violence to him, consumed his energy. Elaborate euphemisms may conceal your intent to kill but behind any use of power over another the ultimate assumption remains: "I feed on your energy."

—Addenda to Orders In Council
The Emperor Paul Maud'dib

THE ground grew hot. Paul heard the sounds of running stop. Men threw themselves down all around him, every one of them aware that there was no point in running. The first damage had been done; and now they must wait out the extent of the stone burner's potency. The thing's radiation, which no man could outrun, already had penetrated their flesh. The peculiar result of stone burner radiation already was at work in them. What else this weapon might do now lay in the planning of the men who had used it in defiance of the Great Convention.

"Gods... a rotten stone burner," someone whimpered. "I don't... want... to be... blind."

"Who does?" It was the harsh voice of a trooper.

"The Tleilaxu will sell many eyes here," someone near Paul growled. "Now, shut up and wait!"

They waited.

Paul remained silent, thinking what this weapon implied. Too much fuel in it and it would cut its way into the planet's core, Dune's molten level lay deep, but the more dangerous for that. Such pressures released and out of control might split a planet, scattering lifeless bits and pieces through space.

"I think it's dying down a bit," someone said.

"It's just digging deeper," Paul cautioned. "Stay put, all of you. Stilgar will be sending help."

"Stilgar got away?"

"Stilgar got away."

"The ground's hot," someone complained.

"They dared use atomics!" a trooper yelled furiously.

"The sound's diminishing," someone down the street said.

PAUL ignored the words and concentrated on his fingertips touching the street. He could feel the rolling-rumbling of the thing—deep... deep...

"My eyes!" someone cried. "I can't see!"

Someone closer to it than I was, Paul thought. He still could see to the end of the cul-de-sac when he lifted his head, although there was a mistiness across the scene. A red-yellow glow filled the area where Otheim's house

and its neighbor had been. Pieces of adjoining buildings made dark patterns as they crumbled into the glowing pit.

Paul climbed to his feet. He felt the stone burner die, leaving silence beneath him. His body was wet with perspiration against the stilsuit's slickness—too much for the suit to accommodate. The air in his lungs carried the heat and sulfur stench of the burner.

As he looked at the troopers beginning to stand up around him, the mist on Paul's eyes faded into darkness. He summoned up his oracular vision of these moments, then turned and strode along the track that Time had carved for him, fitting himself into the vision so tightly that it could not escape. He felt himself grow aware of this place as a multitudinous possession, reality welded to prediction.

Moans and groans of his troopers arose all around him as the men realized their blindness.

"Hold fast!" Paul shouted. "Help is coming!" And, as the complaints persisted, he said: "This is Maud'dib! I command you to hold fast! Help comes!" Silence.

Then, true to his vision, a nearby guardman said: "Is it truly the Emperor? Which of you can see? Tell me."

"None of us has eyes," Paul said. "They have taken my eyes as well, but not my vision. I can see you standing there, a dirty wall within touching distance on your left. Now, wait bravely. Stil-

gar comes soon with our friends."

The thwock-thwack of many 'thopters grew louder all around. There was the sound of hurrying feet. Paul *watched* his friends come, matching their sounds to his oracular vision.

"Stilgar!" Paul shouted, waving an arm. "Over here!"

"Thanks to Shai-hulud," Stilgar cried, running up to Paul. "You're not..." In the sudden silence, Paul's vision showed him Stilgar staring with an expression of agony at the ruined eyes of his friend and emperor. "Oh, m' Lord," Stilgar groaned. "Usul... Usul... Usul..."

"What of the stone burner?" one of the newcomers shouted.

"It's ended," Paul said, raising his voice. He gestured. "Get up there now and rescue the ones who were closest to it. Put up barriers. Lively now!" He turned back to Stilgar.

"Do you see, m'Lord?" Stilgar asked, wonder in his tone. "How can you see?"

For answer, Paul put a finger out to touch Stilgar's cheek above the stilsuit mouthcap, felt tears. "You need give no moisture to me, old friend," Paul said. "I am not dead."

"But your eyes!"

"They've blinded my body, but not my vision," Paul said. "Ah, Stil, I live in an apocalyptic dream. My steps fit into it so precisely that I fear most of all I will grow bored reliving the thing so exactly."

"Usul, I don't, I don't..."

"Don't try to understand it. Accept it. I am in the world beyond this world here. For me, they are the same. I need no hand to guide me. I see every movement all around me. I see every expression of your face. I have no eyes, yet I see."

STILGAR shook his head sharply. "Sire, we must conceal your affliction from..."

"We hide it from no man," Paul said.

"But the law..."

"We live by the Atreides Law now, Stil. The Fremens Law that the blind should be abandoned in the desert applies only to the blind. I am not blind. I live in the cycle of being where the war of good and evil has its arena. We are at a turning point in the succession of ages and we have our parts to play."

In a sudden stillness. Paul heard one of the wounded being led past him. "It was terrible," the man groaned, "a great fury of fire."

"None of these men shall be taken into the desert," Paul said. "You hear me, Stil?"

"I hear you, m'Lord."

"They are to be fitted with new eyes at my expense."

"It will be done, m'Lord."

Paul, hearing the awe grow in Stilgar's voice, said: "I will be at the Command 'thopter. Take charge here."

"Yes, m'Lord."

Paul stepped around Stilgar, strode down the street. His vision

told him every movement, every irregularity beneath his feet, every face he encountered. He gave orders as he moved, pointing to men of his personal entourage, calling out names, summoning to himself the ones who represented the intimate apparatus of government. He could feel the terror grow behind him, the fearful whispers.

"His eyes!"

"But he looked right at you, called you by name!"

At the Command 'thopter, he deactivated his personal shield, reached into the machine and took the microphone from the hand of a startled communications officer. He issued a swift string of orders and thrust the microphone back into the officer's hand. Turning, Paul summoned a weapons specialist, one of the eager and brilliant new breed who remembered sietch life only dimly.

"They used a stone burner," Paul said.

After the briefest pause, the man said: "So I was told, Sire."

"You know what that means, of course."

"The fuel could only have been atomic."

Paul nodded, thinking of how this man's mind must be racing. Atomics. The Great Convention prohibited such weapons. Discovery of the perpetrator would bring down the combined retributive assault of the Great Houses. Old feuds would be forgotten, discarded in the face of this threat and the ancient fears it aroused.

"It cannot have been manufactured without leaving some traces," Paul said. "You will assemble the proper equipment and search out the place where the stone burner was made."

"At once, Sire." With one last fearful glance, the man sped away. "M'Lord," the communications officer ventured from behind him. "Your eyes . . ."

Paul turned, reached into the thopter and retuned the command set to his personal band. "Call Chani," he ordered. "Tell her . . . tell her I am alive and will be with her soon."

Now the forces gather, Paul thought. And he noted how strong was the smell of fear in the perspiration all around.

XVIII

*"He has gone from Alia,
The womb of heaven!
Holy, holy, holy!
Firesand leagues
Confront our Lord.
He can see
Without eyes!
A daemon upon him!
Holy, holy, holy
Equation:
He solved for
Martyrdom!"*

—The Moon Falls Down
Songs of Muad'dib

AFTER seven days of radiating fevered activity, the Keep took on an unnatural quiet. On this morning, there were people about, but they spoke in whispers, heads

close together, and they walked softly. Some scurried with an oddly furtive gait. The sight of a Guard detail coming in from the forecourt drew questioning looks. Frowns greeted the noise these newcomers raised with their tramping about and stacking of weapons. The newcomers caught the mood of the interior, though, and began moving in furtively.

Talk of the stone burner still floated around: "He said the fire had blue-green in it and a smell out of hell."

"Elpa is a fool! He says he'll commit suicide rather than take Teilaxu eyes."

"I don't like talk of eyes."
"Muad'dib passed me and he called me by name!"

"How does He see without eyes?"

"People are leaving, had you heard? There's great fear. The Naibs say they'll go to Sietch Makab for a Grand Council."

"What have they done with the Panygerist?"

"I saw them take him into the chamber where the Naibs are meeting. Imagine Korba a prisoner!"

Chani had arisen early, awakened by a stillness in the Keep. Turning, she had found Paul sitting up beside her, his eyeless sockets aimed at some formless place beyond the far wall of their bedchamber. What the stone burner had left with its peculiar affinity for eye tissue, all that ruined flesh, had been removed. Injections and unguents had saved the stronger flesh around the sockets, but she

felt that the radiation had gone deeper.

Ravenous hunger seized her as she sat up. She fed on the food kept by the bedside—spicebread, a heavy cheese.

Paul gestured at the food. "Beloved, there was no way to spare you this. Believe me."

Chani stilled a fit of trembling when he aimed those empty sockets at her. She'd given up asking him to explain. He spoke so oddly. *"I was baptized in sand and it cost me the knack of believing. Who trades in faiths any more? Who'll buy? Who'll sell?"*

What could he mean by such words?

He refused even to consider Teilaxu eyes, although he bought them with a lavish hand for the men who shared his affliction.

HUNGER satisfied, Chani slipped from bed. She glanced back at Paul, noting his tiredness. Grim lines framed his mouth. The dark hair stood up, mussed from a sleep that hadn't healed. He appeared so saturnine and remote. The back and forth of waking and sleeping did nothing to change this. She forced herself to turn away and whispered: "My love . . . my love . . ."

He leaned over, pulled her back into the bed and kissed her cheeks. "Soon we'll go back to our desert," he whispered. "Only a few things remain to be done."

She trembled at the finality in his voice.

He tightened his arms around her. He murmured: "Don't fear me, my Sihaya. Forget mystery and accept love. There's no mystery about love. It comes from life. Can't you feel that?"

"Yes."

She put a palm against his chest, counting his heartbeats. His love cried out to the Fremen spirit in her—torrential, outpouring, savage. A magnetic power enveloped her.

"I promise you a thing, beloved," he said. "A child of ours will rule such an empire that mine will fade in comparison. Such achievements of living and art and sublime . . ."

"We're here now!" she protested, fighting a dry sob. "And . . . I feel we have so little . . . time."

"We have eternity, beloved."
"You may have eternity. I have only now."

"But this is eternity." He stroked her forehead.

She pressed against him, lips on his neck. The pressure agitated the life in her womb. She felt it stir.

Paul felt it, too. He put a hand on her abdomen. "Ahh, little ruler of the universe, wait your time. This moment is mine."

She wondered then why he always spoke of the life within her as singular. Hadn't the medics told him? She searched back in her own memory, curious that the subject had never arisen between them. Surely, he must know she carried twins. She hesitated on the point of raising this ques-

tion. He *must* know. He knew everything. He knew all the things that were herself. His hands, his mouth—all of him knew her.

Presently, she said: "Yes, love. This is forever...this is real." And she closed her eyes tightly lest sight of his dark sockets stretch her soul from paradise to hell. No matter the *Rihani* magic in which he'd enciphered their lives, his flesh remained real, his caresses could not be denied.

When they arose to dress for the day, she said: "If the people only knew your love..."

But his mood had changed. "You can't build politics on love," he said. "People aren't concerned with love; it's too disordered. They prefer despotism. Too much freedom breeds chaos. We can't have that, can we? And how do you make despotism lovable?"

"You're not a despot!" she protested, tying her scarf. "Your laws are just."

"Ahh, laws," he said. He crossed to the window and pulled back the draperies as though he could look out. "What's law? Control? Law filters chaos and what drips through? Serenity? Law—our highest ideal and our basest nature. Don't look too closely at the law. Do, and you'll find the rationalized interpretations, the legal casuistry, the precedents of convenience. You'll find the serenity, which is just another word for death."

Chani's mouth drew into a tight line. She couldn't deny his wisdom and sagacity, but these moods frightened her. He turned

upon himself and she sensed internal wars. It was as though he took the Fremen maxim, *Never to forgive—never to forget!*, and whipped his own flesh with it.

She crossed to his side and stared past him at an angle. The growing heat of the day had begun pulling the north wind out of these protected latitudes. The wind painted a false sky full of ochre plumes and sheets of crystal, strange designs in rushing gold and red. High and cold, the wind broke against the Shield Wall with fountains of dust.

PAUL felt Chani's warmth beside him. Momentarily, he lowered a curtain of forgetfulness across his vision. He might just be standing here with his eyes closed. Time refused to hold still for him, though. He inhaled darkness—starless, tearless. His affliction dissolved substance until all that remained was astonishment at the way sounds condensed his universe. Everything around him leaned on his lonely sense of hearing, falling back only when he touched objects—the drapery, Chani's hand...He caught himself listening for Chani's breaths.

Where was the insecurity of things that were only probable? His mind carried such a burden of mutilated memories. For every instant of reality there existed countless projections, things fated never to be. An invisible self within him remembered the false pasts, their burden threatening at times to overwhelm the present.

Chani leaned against his arm.

He felt his body through her touch—dead flesh carried by time-eddies. He reeked of memories that had glimpsed eternity. To see eternity was to be exposed to eternity's whims, oppressed by endless dimensions. The oracle's false immortality demanded retribution. Past and Future became simultaneous.

Once more, the vision arose from its black pit, locked onto him. It was his eyes. It moved his muscles. It guided him into the next moment, the next hour, the next day...until he felt himself to be always *there!*

"It's time we were going," Chani said. "The Council..."

"Alia will be there to stand in my place."

"Does she know what to do?"

"She knows."

ALIA'S day began with a Guard squadron swarming into the parade yard below her quarters. She stared down at a scene of frantic confusion, clamorous and intimidating babble. The scene became intelligible only when she recognized the prisoner they'd brought—Korba, the panygerist.

She made her morning toilet, moving occasionally to the window, keeping watch on the progress of impatience down there. Her gaze kept straying to Korba. She tried to remember him as the rough and bearded commander of the Third Wave in the Battle of Arrakeen. It was impossible. Korba had become an immaculate fop dressed now in a *Parato* silk robe

of exquisite cut. It lay open to the waist, revealing a beautifully laundered ruff and embroidered undercoat set with green gems. A purple belt gathered the waist. The sleeves poking through the robe's armhole slits had been tailored into rivulet ridges of dark green and black velvet.

A few Naibs had come out to observe the treatment accorded a fellow Fremen. They'd brought on the clamor, exciting Korba to protest his innocence. Alia moved her gaze across the Fremen faces, trying to recapture memories of the original men. The present blotted out the past. They'd all become hedonists, samplers of pleasures most men couldn't even imagine.

Their uneasy glances, she saw, strayed often to the doorway into the chamber where they would meet. They were thinking of Muad'dib's blind-sight, a new manifestation of mysterious powers. By their law, a blind man should be abandoned in the desert, his water given up to Shai-hulud. But eyeless Muad'dib saw them. They disliked buildings, too, and felt vulnerable in space built above the ground. Give them a proper cave cut from rock, then they could relax—but not here, not with this new Muad'dib waiting inside.

As she turned to go down to the meeting, she saw the letter where she'd left it on a table by the door—the latest message from their mother. Despite the special reverence held for Caladan as the place of Paul's birth, the Lady Jessica had emphasized her refusal

to make her planet a stop on the Hajj.

"No doubt my son is an epochal figure of history," she'd written, "but I cannot see this as an excuse for submitting to a rabble invasion."

Alia touched the letter, experiencing an odd sensation of mutual contact. This paper had been in her mother's hand. Such an archaic device, the letter—but personal in a way no recording could achieve. Written in the Atreides Battle Tongue, it represented an almost invulnerable privacy of communication.

Thinking of her mother afflicted Alia with the usual inward blurring. The spice change that had mixed the psyches of mother and daughter forced her at times to think of Paul as a son to whom she had given birth. The capsule-complex of oneness could present her own father as a lover. Ghost shadows cavorted in her mind, people of possibility.

ALIA reviewed the letter as she walked down the ramp to the antechamber where her guard Amazons waited.

"You produce a deadly paradox," Jessica had written. "Government cannot be religious and self-assertive at the same time. Religious experience needs a spontaneity which laws inevitably suppress. And you cannot govern without laws. Your laws eventually must replace morality, replace conscience, replace even the religion by which you think to govern. Sacred ritual must spring from

praise and holy yearnings which hammer out a significant morality. Government, on the other hand, is a cultural organism particularly attractive to doubts, questions and contentions. I see the day coming when ceremony must take the place of faith and symbolism replace morality."

The smell of spice coffee greeted Alia in the antechamber. Four Guard amazons in green watch-ropes came to attention as she entered. They fell into step behind her, striding firmly in the bravado of their youth, eyes alert for trouble. They had zealot faces untouched by awe. They radiated that special Fremen quality of violence; they could kill casually with no sense of guilt.

In this, I am different, Alia thought. The Atreides name has enough dirt on it without that.

Word preceded her. A waiting Page darted off as she entered the lower hall, running to summon the full Guard detail. The hall stretched out windowless and gloomy, illuminated only by a few subdued glowglobes. Abruptly, the doors to the parade yard opened wide at the far end to admit a glaring shaft of daylight. The Guard with Korba in their midst wavered into view from the outside with the light behind them.

"Where is Stilgar?" Alia demanded.

"Already inside," one of her Amazons said.

Alia led the way into the chamber. It was one of the Keep's more pretentious meeting places. A high balcony with rows of soft seats

occupied one side. Across from the balcony, orange draperies had been pulled back from tall windows. Bright sunlight poured through from an open space with a garden and a fountain. At the near end of the chamber on her right stood a dais with a single massive chair.

Moving to the chair, Alia glanced back and up, to see the gallery filled with Naibs.

Household Guardsmen packed the open space beneath the gallery, Stilgar moving among them with a quiet word here, a command there. He gave no sign that he'd seen Alia enter.

Korba was brought in, seated at a low table with cushions beside it on the chamber floor below the dais. Despite his finery, the panygerist gave the appearance now of a surly, sleepy old man huddled up in his robes as against the outer cold. Two Guardsmen took up positions behind him.

Stilgar approached the dais as Alia seated herself.

"Where is Muad'dib!" he demanded.

"My brother has delegated me to preside as Reverend Mother," Alia said.

Hearing this, the Naibs in the gallery began raising their voices in protest.

"Silence!" Alia commanded. In the abrupt quiet, she said: "Is it not Fremen law that a Reverend Mother presides when life and death are at issue!"

AS THE gravity of her statement penetrated, stillness came

over the Naibs, but Alia marked angry stares across the rows of faces. She named them in her mind for discussion in Council—Hobars, Rajifiri, Tasmin, Saajid, Umbu, Legg... The names carried pieces of Dune in them—Umbu Stetch, Tasmin Sink, Hobars Gap...

She turned her attention to Korba.

Observing her attention, Korba lifted his chin. "I protest my innocence."

"Stilgar, read the charges," Alia said.

Stilgar produced a brown spice-paper scroll and stepped forward. He began reading, a solemn flourish in his voice as though to hidden rhythms. He gave the words an incisive quality, clear and full of probity—

"...that you did conspire with traitors to accomplish the destruction of our Lord and Emperor; that you did meet in vile secrecy with diverse enemies of the realm; that you..."

Korba kept shaking his head with a look of pained anger.

Alia listened broodingly, chin planted on her left fist, head cocked to that side, the other arm extended along the chair arm. Bits of the formal procedure began dropping out of her awareness, screened by her own feelings of disquiet.

"...venerable tradition... support of the Legions and all Fremen everywhere... violence met with violence according to the Law... majesty of the Imperial Person... forfeit all rights to..."

It was nonsense, she thought. Nonsense! All of it—nonsense... nonsense... nonsense...

Stilgar finished: "Thus the issue is brought to judgment."

In the immediate silence, Korba rocked forward, hands gripping his knees, veined neck stretching as though he were preparing to leap. His tongue flicked between his teeth as he spoke.

"Not by word or deed have I been traitor to my Fremen vows! I demand to confront my accuser!"

A simple enough protest, Alia thought.

And she saw that it had produced a considerable effect on the Naibs. They knew Korba. He was one of them. To become a Naib, he'd proved his Fremen courage and caution. Not brilliant, Korba, but reliable. Not one to lead a Jihad, perhaps, but a good choice as supply officer. Not a crusader, but one who cherished the old Fremen virtues: *The Tribe is paramount*.

Otheym's bitter words as Paul had recited them swept through Alia's mind. She scanned the gallery. Any of those men might see himself in Korba's place—some for good reason. But an innocent Naib was as dangerous as a guilty one here.

Korba felt it, too. "Who accuses me?" he demanded. "I have a Fremen right to confront my accuser."

"Perhaps you accuse yourself," Alia said.

Before he could mask it, mystical terror lay briefly on Korba's

face. It was there for anyone to read: *With her powers, Alia had but to make accusations, saying she brought the evidence from the shadow region, the alam al-mythal.*

"Our enemies have Fremen allies," Alia pressed. "Water traps have been destroyed, qanats blasted, planting poisoned and storage basins plundered..."

AND NOW—they've stolen a worm from the desert, taken it to another world!"

The voice of this intrusion was known to all of them—Muad'dib. Paul came through the doorway from the hall, pressed through the Guard ranks and crossed to Alia's side. Chani, accompanying him, remained on the sidelines.

"M'Lord," Stilgar said, refusing to look at Paul's face.

Paul aimed his empty sockets at the gallery, then down to Korba. "What, Korba—no words of praise?"

Muttering could be heard in the gallery. It grew louder, isolated words and phrases audible: "...law for the blind... Fremen way... in the desert... who breaks..."

"Who says I'm blind?" Paul demanded. He faced the gallery. "You, Rajifiri? I see you're wearing gold today, and that blue shirt beneath it which still has dust on it from the streets. You always were untidy."

Rajifiri made a warding gesture, three fingers against evil.

"Point those fingers at yourself!" Paul shouted. "We know where the evil is!" He turned

back to Korba. "There's guilt on your face, Korba."

"Not my guilt! I may have associated with the guilty, but not..." He broke off, shot a frightened look at the gallery.

Taking her cue from Paul, Alia arose, stepped down to the floor of the chamber and advanced to the edge of Korba's table. From a range of less than a meter, she stared down at him, silent and intimidating.

Korba cowered under the burden of eyes. He fidgeted. He shot anxious glances at the gallery.

"Whose eyes do you seek up there?" Paul asked.

"You cannot see!" Korba blurted.

Paul put down a momentary feeling of pity for Korba. The man lay trapped in the vision's snare as securely as any of those present. He played a part, no more.

"I don't need eyes to see you," Paul said. And he began describing Korba, every movement, every twitch, every alarmed and pleading look at the gallery.

Desperation grew in Korba.

Watching him, Alia saw that he might break any second. Someone in the gallery must realize how near he was to breaking, she thought. Who? She studied the faces of the Naibs, noting small betrayals in the masked faces... angers, fears, uncertainties... guilts.

Paul fell silent.

Korba mustered a pitiful air of pomposity to plead: "Who accuses me?"

"Otheym accuses you," Alia said.

"But Otheym's dead!" Korba protested.

"How did you know that?" Paul asked. "Through your spy system? Oh, yes! We know about your spies and couriers. We know who brought the stone burner here from Tarahell."

"It was for the defense of the Qizarate!" Korba blurted.

"Is that how it got into traitorous hands?" Paul asked.

"It was stolen and we..." Korba fell silent, swallowed. His gaze darted left and right. "Everyone knows I've been the voice of love for Muad'dib." He stared at the gallery. "How can a dead man accuse a Fremen?"

"Otheym's voice isn't dead," Alia said. She stopped as Paul touched her arm.

OTHEYM sent us his voice," Paul said. "It gives the names, the acts of treachery, the meeting places and the times. Do you miss certain faces in the Council of Naibs, Korba? Where are Merkur and Fash? Keke the Lame isn't with us today. And Takim, where is he?"

Korba shook his head from side to side.

"They've fled Arrakis with the stolen worm," Paul said. "Even if I freed you now, Korba, Shai-hulud would have your water for your part in this. Why don't I free you, Korba? Think of all those men whose eyes were taken, the men who cannot see as I see.

They have families and friends, Korba. Where could you hide from them?"

"It was an accident," Korba pleaded. "Anyway, they're getting Tcilaxu..." Again, he subsided.

"Who knows what bondage goes with metal eyes?" Paul asked.

The Naibs in their gallery began exchanging whispered comments, speaking behind raised hands. They gazed coldly at Korba now.

"Defense of the Qizarate," Paul murmured, returning to Korba's plea. "A device which either destroys a planet or produces J-rays to blind those too near it. Which effect, Korba, did you conceive as a defense? Does the Qizarate rely on stopping the eyes of all observers?"

"It was a curiosity, m'Lord," Korba pleaded. "We knew the Old Law said that only Families could possess atomics, but the Qizarate obeyed... obeyed..."

"Obeyed you," Paul said. "A curiosity, indeed."

"Even if it's only the voice of my accuser, you must face me with it!" Korba said. "A Fremmen has rights."

"He speaks truth, Sire," Stilgar said.

Alia glanced sharply at Stilgar. "The law is the law," Stilgar said, sensing Alia's protest. He began quoting Fremmen Law, interspersing his own comments on how the Law pertained.

Alia experienced the odd sensation that she was hearing Stilgar's words before he spoke them.

How could he be this credulous? Stilgar has never appeared more official and conservative, more intent on adhering to the Dune Code. His chin was outthrust and aggressive. His mouth chopped. Was there really nothing in him but this outrageous pomposity?

"Korba is a Fremmen and must be judged by Fremmen Law," Stilgar concluded.

ALIA turned away, looking out at the day shadows dropping down the wall across from the garden. She felt drained by frustration. They'd dragged this thing along well into mid-morning. Now, what? Korba had relaxed. The panygerist's manner said he'd suffered an unjust attack, that everything he'd done had been for love of Muad'dib. She glanced at Korba, surprising a look of sly self-importance sliding across his face.

He might almost have received a message, she thought. He acted the part of a man who'd heard friends shout: "*Hold fast! Help is on its way!*"

For an instant, they'd held this thing in their hands — the information out of the dwarf, the clues that others were in the plot, the names of informants. But the critical moment had flown. *Stilgar? Surely not Stilgar.* She turned to stare at the old Fremmen.

Stilgar met her gaze without flinching.

"Thank you, Stil," Paul said, "for reminding us of the Law."

Stilgar inclined his head. He moved close, shaped silent words

in a way he knew both Paul and Alia could read. "*I'll wring him dry and then take care of the matter.*"

Paul nodded, signaled the Guardsmen behind Korba.

"Remove Korba to a maximum security cell," Paul said. "No visitors except counsel. As counsel, I appoint Stilgar."

"Let me choose my own counsel!" Korba shouted.

Paul whirled. "You deny the fairness and judgment of Stilgar?"

"Oh, no, m'Lord, but..."

"Take him away!"

The Guardsmen lifted Korba off the cushions and herded him out.

With new mutterings, the Naibs began quitting their gallery. Attendants came from beneath the gallery, crossed to the windows and drew the orange draperies. A gloom took over the chamber.

"Paul," Alia said.

"When we precipitate violence," Paul said, "it'll be when we have full control of it. Thank you, Stil; you played your part well. Alia, I'm certain, has identified the Naibs who were with him. They couldn't help giving themselves away."

"You cooked this up between you?" Alia demanded.

"Had I ordered Korba slain out of hand, the Naibs would have understood," Paul said. "But this formal procedure without strict adherence to Fremmen Law — they felt their own rights threatened. Which Naibs were with him, Alia?"

"Rajifiri for certain," she said, voice low. "And Saajid, but..."

"Give Stilgar the complete list," Paul said.

ALIA swallowed in a dry throat, sharing the general fear of Paul in this moment. She knew how he moved among them without eyes, but the delicacy of it daunted her. To see their forms in the air of his vision! She sensed her person shimmering for him in a sidereal time whose accord with reality depended entirely on his words and actions. He held them all in the palm of his vision!

"It's past time for your morning audience, Sire," Stilgar said. "Many people — curious... afraid..."

"Are you afraid, Stil?"

It was barely a whisper. "Yes." "You're my friend and have nothing to fear from me," Paul said.

Stilgar swallowed. "Yes, m'Lord."

"Alia, take the morning audience," Paul said. "Stilgar, give the signal."

Stilgar obeyed.

A flurry of movement erupted at the great doors. A crowd was pressed back from the shadowy room to permit entrance of officials. Many things began happening all at once — the Household Guard elbowing and shoving back the press of supplicants, garishly robed Pleaders trying to break through shouts, curses. Pleaders waved the papers of their calling. The Clerk of the Assemblage

strode ahead of them through the opening cleared by the Guard. He carried the List of Preferences, those who'd be permitted to approach the Throne. The Clerk, a wroth Fremmen named Tecrube, carried himself with weary cynicism, flaunting his shaven head and clumped whiskers.

Alia moved to intercept him, giving Paul time to slip away with Chani through the private passage behind the dais. She experienced a momentary distrust of Tecrube at the prying curiosity in the stare he sent after Paul.

"I speak for my brother today," she said. "Have the Supplicants approach one at a time."

"Yes, m'Lady." He turned to arrange his throng.

"I can remember a time when you wouldn't have mistaken your brother's purpose here," Stilgar said.

"I was distracted," she said. "There's been a dramatic change in you, Stil. What is it?"

Stilgar drew himself up, shocked. One changed, of course. But dramatically? This was a particular view of himself that he'd never encountered. Drama was a questionable thing. Imported entertainers of dubious loyalty and more dubious virtue were dramatic. Enemies of the Empire employed drama in their attempts to sway the fickle populace. Korba had slipped away from Fremmen virtues to employ drama for the Qizarate. And he'd die for that.

"You're being perverse," Stilgar said. "Do you distrust me?"

The distress in his voice softened her expression, but not her tone. "You *know* I don't distrust you. I've always agreed with my brother that once matters were in Stilgar's hands we could safely forget them."

"Then why do you say I've... changed?"

"You're preparing to disobey my brother," she said. "I can read it in you. I only hope it doesn't destroy you both."

The first of the Pleaders and Supplicants were approaching now. She turned away before Stilgar could respond. His face, though, was filled with the things she'd sensed in her mother's letter—the replacement of morality and conscience with law.

"You produce a deadly paradox."

XIX

Tibana was an apologist for Socratic Christianity, probably a native of IV Anbus who lived between the 8th and 9th Centuries before Corrinio, likely in the second reign of Dalamak. Of his writings, only a portion survives from which this fragment is taken: "The hearts of all men dwell in the same wilderness."

—from the Dunebuk of Irulan

YOU are Bijaz," the gholah said, entering the small chamber where the dwarf was held under guard. "I am called Hayt."

A strong contingent of the Household Guard had come in

with the gholah to take over the evening watch. Sand carried by the sunset wind had stung their cheeks while they crossed the outer yard and made them blink and hurry. They could be heard in the passage outside now, exchanging the banter and ritual of their tasks.

"You are not Hayt," the dwarf said. "You are Duncan Idaho. I was there when they put your dead flesh into the tank and I was there when they removed it, alive and ready for training."

The gholah swallowed in a throat suddenly dry. The bright glowglobes of the chamber lost their yellowness in the room's green hangings. The light showed beads of perspiration on the dwarf's forehead. Bijaz seemed a creature of odd integrity, as though the purpose fashioned into him by the Teilexau was projected out through his skin. There was power beneath the dwarf's mask of cowardice and frivolity.

"Muad'dib has charged me to question you to determine what it is the Teilexau intend you to do here," Hayt said.

"Teilexau, Teilexau," the dwarf sang. "I am the Teilexau, you dolt! For that matter, so are you."

Hayt stared at the dwarf. Bijaz radiated a charismatic alertness that made the observer think of ancient idols.

"You hear that guard outside?" Hayt asked. "If I gave them the order, they'd strangle you."

"Hail! Hail!" Bijaz cried. "What a callous lout you've be-

come. And you said you came seeking truth."

Hayt found he didn't like the look of secret repose beneath the dwarf's expression. "Perhaps I only seek the future," he said.

"Well spoke," Bijaz said.

"Now, we know each other. When two thieves meet they need no introduction."

"So we're thieves," Hayt said. "What do we steal?"

"Not thieves, but dice," Bijaz said. "And you came here to read my spots. I, in turn, read yours. And lo! You have two faces!"

"Did you really see me go into the Teilexau tanks?" Hayt asked, fighting an odd reluctance to ask that question.

"Did I not say it?" Bijaz demanded. The dwarf bounced to his feet. "We had a terrific struggle with you. The flesh did not want to come back."

HAYT felt suddenly that he existed in a dream controlled by some other mind, and that he might momentarily forget this to become lost in the convolutions of that mind.

Bijaz tipped his head slyly to one side and walked all around the gholah, staring up at him. "Excitement kindles old patterns in you," Bijaz said. "You are the pursuer who doesn't want to find what he pursues."

"You're a weapon aimed at Muad'dib," Hayt said, swivelling

to follow the dwarf. "What is it you're to do?"

"Nothing!" Bijaz said, stopping. "I give you a common answer to a common question."

"Then you were aimed at Alia," Hayt said. "Is she your target?"

"They call her Hawt, the Fish Monster, on the outworlds," Bijaz said. "How is it I hear your blood boiling when you speak of her?"

"So they call her Hawt," the ghola said, studying Bijaz for any clue to his purpose. The dwarf made such odd responses.

"She is the virgin-harlot," Bijaz said. "She is vulgar, witty, knowledgeable to a depth that terrifies, cruel when she is most kind, unthinking while she thinks, and when she seeks to build she is as destructive as a corealis storm."

"So you came here to speak out against Alia," Hayt said.

"Against her?" Bijaz sank to a cushion against the wall. "I came here to be captured by the magnetism of her physical beauty." He grinned, a saurian expression on the big-featured face.

"To attack Alia is to attack her brother," Hayt said.

"That is so clear it is difficult to see," Bijaz said. "In truth, Emperor and sister are one person back to back, one being, half male and half female."

"That is a thing we've heard said by the Fremen of the deep desert," Hayt said. "And those are the ones who've revived the blood sacrifice to Shai-hulud. How is it you repeat their nonsense?"

"You dare say nonsense?" Bijaz demanded. "You, who are both man and mask? Ahh, but the dice cannot read their own spots. I forget this. And you are doubly confused because you serve the Atreides double-being. Your senses are not as close to the answer as your mind is."

"Do you preach that false ritual about Muad'dib to your guards?" Hayt asked, his voice low. He felt his mind being tangled by the dwarf's words.

"They preach to me!" Bijaz said. "And they pray. Why should they not? All of us should pray. Do we not live in the shadow of the most dangerous creation the universe has ever seen?"

"Dangerous creation?"

"Their own mother refuses to live on the same planet with them!"

WHY don't you answer me straight out?" Hayt demanded. "You know we have other ways of questioning you. We'll get our answers... one way or another."

"But I have answered you! Have I not said the myth is real? Am I the wind that carries death in its belly? No! I am words! Such words as the lightning which strikes from the sand in a dark sky. I have said: 'Blow out the lamp! Day is here!' And you keep saying: 'Give me a lamp so I can find the day.'"

"You play a dangerous game with me," Hayt said. "Did you think I could not understand these

Zensunni ideas? You leave tracks as clear as those of a bird in mud."

Bijaz began to giggle.

"Why do you laugh?" Hayt demanded.

"Because I have teeth and wish I had not," Bijaz managed between giggles. "Having no teeth, I could not gnash them."

"And now I know your target," Hayt said. "You were aimed at me."

"And I've hit it right on!" Bijaz said. "You made such a big target, how could I miss?" He nodded as though to himself. "Now, I will sing to you." He began to hum a keening, whining monotonous theme repeated over and over.

Hayt stiffened, experiencing odd pains that played up and down his spine. He stared at the face of the dwarf, seeing youthful eyes in an old face. The eyes were the center of a network of knobby white lines which ran to the hollows below his temples. Such a large head! Every feature focused on the pursed-up mouth from which that monotonous noise issued. The sound made Hayt think of ancient rituals, folk memories, old words and customs, half-forgotten meanings in lost mutterings. Something vital was happening here—a bloody play of ideas across Time. Older ideas lay tangled in the dwarf's singing. It was like a blazing light in the distance, coming nearer and nearer, illuminating life across a span of centuries.

"What are you doing to me?" Hayt gasped.

"You are the instrument I was taught to play," Bijaz said. "I am playing you. Let me tell you the names of the other traitors among the Naibs. They are Bikouros and Cahueit. There is Djedida, who was secretary to Korba. There is Abumojandis, the aide to Bannerjee. Even now, one of them could be sinking a blade into your Muad'dib."

Hayt shook his head from side to side. He found it too difficult to talk.

"We are like brothers," Bijaz said, interrupting his monotonous hum once more. "We grew in the same tank; I first and then you."

Hayt's metal eyes inflicted him with a sudden burning pain. Flickering red haze surrounded everything he saw. He felt he had been cut away from every immediate sense except the pain; and he experienced his surroundings through a thin separation like wind-blown gauze. All had become accident, the chance involvement of inanimate matter. His own will was no more than a subtle, shifting thing. It lived without breath and was intelligible only as an inward illumination.

WITH A clarity borne of desperation, he broke through the gauze curtain with the lonely sense of sight. His attention focused like a blazing light upon Bijaz. Hayt felt that his eyes cut through layers of the dwarf, seeing the little man as a hired intellect, and be-

neath that, a creature imprisoned by hungers and cravings which lay huddled in the eyes—layer after layer, until finally, there was only an entity-aspect being manipulated by symbols.

"We are upon a battleground," Bijaz said. "You may speak of it."

His voice freed by the command, Hayt said: "You cannot force me to slay Muad'dib."

"I have heard the Bene Gesserit say," Bijaz said, "that there is nothing firm, nothing balanced, nothing durable in all the universe—that nothing remains in its state, that each day, sometimes each hour, brings change."

Hayt shook his head dumbly from side to side.

"You believed the silly Emperor was the prize we sought," Bijaz said. "How little you understand our masters, the Tleilaxu. The Guild and Bene Gesserit believe we produce artifacts. In reality, we produce tools and services. Anything can be a tool—poverty, war. War is useful because it is effective in so many areas. It stimulates the metabolism. It enforces government. It diffuses genetic strains. It possesses a vitality such as nothing else in the universe. Only those who recognize the value of war and exercise it have any degree of self-determination."

In an oddly placid voice, Hayt said: "Strange thoughts coming from you, almost enough to make me believe in a vengeful providence. What restitution was exact-

ed to create you? It would make a fascinating story, doubtless with an even more extraordinary epilogue."

"Magnificent!" Bijaz chortled. "You attack—therefore you have will power and exercise self-determination."

"You're trying to awaken violence in me," Hayt said in a panting voice.

Bijaz denied this with a shake of the head. "Awaken, yes; violence, no. You are a disciple of awareness by training, so you have said. I have an awareness to awaken in you, Duncan Idaho."

"Hayt!"
"Duncan Idaho. Killer extraordinary. Lover of many women. Swordsman soldier. Atreides field hand on the field of battle. Duncan Idaho!"

"The past cannot ever be awakened."

"Cannot?"

"It has never been done!"
"True, but our masters defy the idea that something cannot be done. Always, they seek the proper tool, the right application of effort, the services of the proper..."

"You hide your real purpose! You throw up a screen of words and they mean nothing!"

"There is a Duncan Idaho in you," Bijaz said. "It will submit to emotion or to dispassionate examination, but submit it will. This awareness will rise through a screen of suppression and selection out of the dark past which dogs your footsteps. It goads you

even now while it holds you back. There exists that being within you upon which awareness must focus and which you will obey."

"The Tleilaxu think I'm still their slave, but I..."

"Quiet, slave!" Bijaz said in that whining voice.

Hayt found himself frozen in silence.

NOW, we are down to bedrock," Bijaz said. "I know you feel it. And these are the power words to manipulate you... I think they will have sufficient leverage."

Hayt felt the perspiration pouring down his cheeks, the trembling of his chest and arms, but he was powerless to move.

"One day," Bijaz said, "the Emperor will come to you. He will say: 'She is gone.' The grief mask will occupy his face. He will give water to the dead, as they call their tears hereabouts. And you will say, using my voice: 'Master! Oh, Master!'"

Hayt's jaw and throat ached with the locking of his muscles. He could only twist his head in a brief arc from side to side.

"You will say, 'I carry a message from Bijaz.'" The dwarf grimaced. "Poor Bijaz, who has no mind... poor Bijaz, a drum stuffed with messages, an essence for others to use... pound on Bijaz and he produces a noise..." Again, he grimaced. "You think me a hypocrite, Duncan Idaho! I am not! I can grieve, too. But

the time has come to substitute swords for words."

A hiccupped shock Hayt. Bijaz giggled. "Ah, thank you, Duncan, thank you. The demands of the body save us. As the Emperor carries the blood of the Harkonnens in his veins, he will do as we demand. He will turn into a spitting machine, a biter of words that ring with a lovely noise to our masters."

Hayt blinked, thinking how the dwarf appeared like an alert little animal, a think of spite and rare intelligence. *Harkonnen blood in the Atreides?*

"You think of Beast Rabban, the vile Harkonnen, and you glare," Bijaz said. "You are like the Fremens in this. When words fail, the sword is always at hand, eh? You think of the torture inflicted upon your family by the Harkonnens. And, through his mother, your precious Paul is a Harkonnen! You would not find it difficult to slay a Harkonnen, now would you?"

Bitter frustration coursed through the ghola. Was it anger? Why should this cause anger?

"Ohhh," Bijaz said. "Ahhhh, hah! Click-click. There is more to the message. It is a trade the Tleilaxu offer your precious Paul Atreides. Our masters will restore his beloved. A sister to yourself—another ghola."

Hayt felt suddenly that he existed in a universe occupied only by his own heartbeats.

"A ghola," Bijaz said. "It will be the flesh of his beloved. She

will bear his children. She will love only him. We can even improve on the original if he so desires. Did ever a man have greater opportunity to regain what he'd lost? It is a bargain he will leap to strike."

BIJAZ nodded, eyes drooping as though tiring. Then: "He will be tempted... and in his distraction, you will move close. In the instant, you will strike! Two gholas, not one! That is what our masters demand!" The dwarf cleared his throat, nodded once more and said: "Speak."

"I will not do it," Hayt said.

"But Duncan Idaho would," Bijaz said. "It will be the moment of supreme vulnerability for this descendant of the Harkonnens. Do not forget this. You will suggest improvements to his beloved—perhaps a deathless heart, gentler emotions. You will offer asylum as you move close to him—a planet of his choice somewhere beyond the Imperium. Think of it! His beloved restored. No more need for tears, and a place of idyls to live out his years."

"A costly package," Hayt said, probing. "He'll ask the price."

"Tell him he must renounce his godhead and discredit the Qizarate. He must discredit himself, his sister."

"Nothing more?" Hayt asked, sneering.

"He must relinquish his CHOAM holdings, naturally."

"Naturally."

"And if you're not yet close

enough to strike, speak of how much the Tleilaxu admire what he has taught them about the possibilities of religion. Tell him the Tleilaxu have a department of religious engineering, shaping religions to particular needs."

"How very clever," Hayt said.

"You think yourself free to sneer and disobey me," Bijaz said. He cocked his head slyly to one side. "Don't deny it..."

"They made you well, little animal," Hayt said.

"And you as well," the dwarf said. "You will tell him to hurry. Flesh decays and her flesh must be preserved in a cryological tank."

Hayt felt himself floundering, caught in a matrix of objects he could not recognize. The dwarf appeared so sure of himself! There had to be a flaw in the Tleilaxu logic. In making their gholas, they'd keyed him to the voice of Bijaz, but... But what? Logic/matrix/object... How easy it was to mistake clear reasoning for correct reasoning! Was Tleilaxu logic distorted?

Bijaz smiled, listening as though to a hidden voice. "Now, you will forget," he said. "When the moment comes, you will remember. He will say: 'She is gone.' Duncan Idaho will awaken then."

The dwarf clapped his hands together.

Hayt grunted, feeling that he had been interrupted in the middle of a thought... or perhaps in the middle of a sentence. What was

it? Something about... targets?

"You think to confuse me and manipulate me," he said.

"How is that?" Bijaz asked.

"I am your target and you can't deny it," Hayt said.

"I would not think of denying it."

"What is it you'd try to do with me?"

"A kindness," Bijaz said. "A simple kindness."

XX

The sequential nature of actual events is not illuminated with lengthy precision by the powers of prescience except under the most extraordinary circumstances. The oracle grasps incidents cut out of the historic chain. Eternity moves. It inflicts itself upon the oracle and the supplicant alike. Let Muad'dib's subjects doubt his majesty and his oracular visions. Let them deny his powers. Let them never doubt Eternity.

—The Dune Gospels

HAYT watched Alia emerge from her temple and cross the plaza. Her guard was bunched close, fierce expressions on their faces to mask the lines moulded by good living and complacency.

A heliograph of 'thopter wings flashed in the bright afternoon sun above the temple, part of the Royal Guard with Maud'dib's fist symbol on the fusilage.

Hayt returned his gaze to Alia. She looked out of place here in

the city, he thought. Her proper setting was the desert—open, untrammelled space. An odd thing about her came back to him as he watched her approach—Alia appeared thoughtful only when she smiled. It was a trick of the eyes, he decided, recalling a cameo memory of her as she'd appeared at the reception for the Guild Ambassador—haughty against a background of music and brittle conversation among extravagant gowns and uniforms. And Alia had been wearing white, dazzling, a bright garment of chastity. He had looked down upon her from a window as she crossed an inner garden with its formal pond, its fluting fountains, fronds of pampas grass and a white belvedere.

Entirely wrong... all wrong. She belonged in the desert.

Hayt drew in a ragged breath. Alia had moved out of his view then as she did now. He waited, clenching and unclenching his fists. The interview with Bijaz had left him uneasy.

He heard Alia's entourage pass outside the room where he waited. She went into the Family quarters.

Now he tried to focus on the thing about her which troubled him. The way she'd walked across the plaza? Yes. She'd moved like a hunted creature fleeing some predator. He stepped out onto the connecting balcony and walked along it behind the plasmeld sun-screen, stopping while still in concealing shadows. Alia stood at the balustrade overlooking her temple.

He looked where she was looking—out over the city. He saw rectangles, blocks of color, creeping movements of life and sound. Structures gleamed and shimmered. Heat patterns spiraled off the rooftops. There was a boy across the way bouncing a ball in a cul-de-sac formed by a buttressed massif at a corner of the temple. Back and forth the ball went.

ALIA, too, watched the ball. She felt a compelling identity with that ball—back and forth... back and forth. She sensed herself bouncing through corridors of Time.

The potion of melange she'd drained just before leaving the temple was the largest she'd ever attempted—a massive overdose. Even before beginning to take effect, it had terrified her.

Why did I do it? she asked herself.

One made a choice between dangers. Was that it? This was the way to penetrate the fogspread over the future by that damnable Dune Tarot. A barrier existed. It must be breached. She had acted out of a necessity to see where it was her brother walked with his eyelless stride.

The familiar melange fugue state began creeping into her awareness. She took a deep breath, experiencing a brittle form of calm, poised and selfless.

Possession of second sight has a tendency to make one a dangerous fatalist, she thought. Unfortun-

ately, there existed no abstract leverage, no calculus of prescience. Visions of the future could not be manipulated as formulae. One had to enter them, risking life and sanity.

A figure moved from the harsh shadows of the adjoining balcony. The ghola! In her heightened awareness, Alia saw him with intense clarity—the dark, lively features dominated by those glistening metal eyes. He was a union of terrifying opposites, something put together in a shocking, linear way. He was shadow and blazing light, a product of the process which had revived his dead flesh... and of something intensely pure... innocent.

He was innocence under siege!
"Have you been there all along, Duncan?" she asked.

"So I'm to be Duncan," he said. "Why?"

"Don't question me," she said. And she thought, looking at him, that the Tleilaxu had left no corner of their ghola unfinished.

"Only gods can safely risk perfection," she said. "It's a dangerous thing for a man."

"Duncan died," he said, wishing she would not call him that. "I am Hayt."

She studied his artificial eyes, wondering what they saw. Observed closely, they betrayed tiny black pockmarks, little wells of darkness in the glittering metal. Facets! The universe shimmered around her and lurched. She steadied herself with a hand on the sun-warmed surface of the balustrade. Ahhh, the melange moved swiftly.

"Are you ill?" Hayt asked. He moved closer, the steady eyes opened wide, staring.

Who spoke? she wondered. Was it Duncan Idaho? Was it the mentat-ghola or the Zensunni philosopher? Or was it a Tleilaxu pawn more dangerous than any Guild steersman? Her brother knew.

Again, she looked at the ghola. There was something inactive about him now, a latent something. He was saturated with waiting and with powers beyond their common life.

"Out of my mother, I am like the Bene Gesserit," she said. "Do you know that?"

"I know it."
"I use their powers, think as they think. Part of me knows the sacred urgency of the breeding program... and its products."

SHE blinked, feeling part of her awareness begin to move freely in Time.

"It's said that the Bene Gesserit never let go," he said. And he watched her closely, noting how white her knuckles were where she gripped the edge of the balcony.

"Have I stumbled?" she asked. He marked how deeply she breathed, with tension in every movement, the glazed appearance of her eyes.

"When you stumble," he said, "you may regain your balance by jumping beyond the thing that tripped you."

"The Bene Gesserit stumbled," she said. "Now, they wish to

regain their balance by leaping beyond my brother. They want Chani's baby... or mine."

"Are you with child?"
She struggled to fix herself in a time/space relationship to this question. With child? When? Where?

"I see... my child," she whispered.

She moved away from the balcony's edge, turning her head to look at the ghola. He had a face of salt, bitter eyes—two circles of glistening lead... and, as he turned away from the light to follow her movement, blue shadows.

"What... do you see with such eyes?" she whispered.

"What other eyes see," he said. His words rang in her ears, stretching her awareness. She felt that she reached across the universe—such a stretching... out... out. She lay intertwined with all Time.

"You've taken the spice, a large dose," he said.

"Why can't I see him?" she muttered. The womb of all creation held her captive. "Tell me, Duncan, why I cannot see him."
"Whom can't you see?"

"I cannot see the father of my children. I'm lost in a Tarot fog. Help me."

Mentat logic offered its prime computation, and he said: "The Bene Gesserit want a mating between you and your brother. It would lock the genetic..."

A wail escaped her. "The egg in the flesh," she gasped. A sensation of chill swept over her, followed by intense heat. The unseen

mate of her darkest dreams! Flesh of her flesh that the oracle could not reveal — would it come to that?

"Have you risked a dangerous dose of the spice?" he asked. Something within him fought to express the utmost terror at the thought that an Atreides woman might die, that Paul might face him with the knowledge that a female of the royal family had departed.

"You don't know what it's like to hunt the future," she said. "Sometimes I glimpse myself... but I get in my own way: I cannot see through myself." She lowered her head and shook it from side to side.

"How much of the spice did you take?" he asked.

"Nature. abhors prescience," she said, raising her head. "Did you know that, Duncan?"

HE spoke softly, reasonably, as to a small child: "Tell me how much of the spice you took." He took hold of her shoulder with his left hand.

"Words are such gross machinery, so primitive and ambiguous," she said. She pulled away from his hand.

"You must tell me," he said.

"Look at the Shield Wall," she commanded, pointing. She sent her gaze along her own outstretched hand, trembling as the landscape crumbled in an overwhelming vision — a sandcastle destroyed by invisible waves. She averted her eyes and was transfixed by the appearance of the ghola's face. His fea-

tures crawled, became aged, then young... aged... young. He was life itself, assertive, endless... She turned to flee, but he grabbed her left wrist.

"I am going to summon a doctor," he said.

"No! You must let me have the vision! I have to know!"

"You are going inside now," he said.

She stared down at his hand. Where their flesh touched, she felt an electric presence that both lured and frightened her. She jerked free to gasp: "You can't hold the whirlwind!"

"You must have medical help!"

"Don't you understand?" she demanded. "My vision's incomplete, just fragments. It flickers and jumps. I have to remember the future. Can't you see that?"

"What is the future if you die?"

he asked, forcing her gently into the Family chambers.

"Words... words," she muttered. "I can't explain it. One thing is the occasion of another thing, but there's no cause... no effect. We can't leave the universe as it was. Try as we may, there's a gap."

"Stretch out here," he commanded.

He is so dense! she thought.

Cool shadows enveloped her. She felt her own muscles crawling like worms — a firm bed that she knew to be insubstantial. Only space was permanent. Nothing else had substance. The bed flowed with many bodies, all of them her own. Time became a multiple sen-

sation, overloaded. It presented no single reaction for her to abstract. It was Time. It moved. The whole universe slipped backward, forward, sidewise.

"It has no thing-aspect," she explained. "You can't get under it or around it. There's no place to get leverage."

There came a fluttering of people all around her. Many someones held her left hand. She looked at her own moving flesh, followed at a twining arm out to a fluid mask of face — Duncan Idaho! His eyes were... wrong, but it was Duncan — child-man-adolescent-child-man-adolescent... Every line of his features betrayed concern for her. "Duncan, don't be afraid," she whispered.

He squeezed her hand and nodded. "Be still," he said.

And he thought: *She must not die! She must not! No Atreides woman can die!* He shook his head sharply. Such thoughts defied mental logic. Death was a necessity that life might continue.

THE ghola loves me, Alia thought.

The thought became bedrock to which she might cling. He was a familiar face with a solid room behind him. She recognized one of the bedrooms in Paul's suite.

A fixed, immutable person did something with a tube in her throat. She fought against retching.

"We got her in time," a voice said, and she recognized the tones of a Family medic. "You should have called me sooner." There was

suspicion in the medic's voice. She felt the tube slide out of her throat — a snake, a shimmering cord.

"The slapshot will make her sleep," the medic said. "I'll send one of her attendants to..."

"I will stay with her," the ghola said.

"That is not seemly!" the medic snapped.

"Stay... Duncan," Alia whispered.

He stroked her hand to tell her he'd heard.

"M'Lady," the medic said. "It would be best if..."

"You do not tell me what is best," she rasped. Her throat ached with each syllable.

"M'Lady," the medic said, voice accusing, "you know the dangers of consuming too much melange. I can only assume someone gave it to you without..."

"You are a fool," she rasped. "Would you deny me my visions? I knew what I took and why." She put a hand to her throat.

"Leave us. At once!"

The medic pulled out of her field of vision. He said: "I will send word to your brother."

She felt him leave and turned her attention to the ghola. The vision-lay clearly in her awareness now, a culture medium in which the present grew outward. She sensed the ghola move in that play of Time, no longer cryptic, fixed now against a recognizable background.

He is the crucible, she thought. He is danger and salvation.

And she shuddered, knowing she saw the vision her brother had seen. Unwanted tears burned her eyes. She shook her head sharply. No tears! They wasted moisture and, worse, distracted the harsh flow of vision. Paul must be stopped! Once, just once, she had bridged Time to place her voice where he would pass. But stress and mutability would not permit that here. The web of Time passed through her brother now like rays of light through a lens. He stood at the focus and he knew it. He had gathered all the lines to himself and would not permit them to escape or change.

"Why?" she muttered. "Is it hate? Does he strike out at Time itself because it hurt him? Is that it... hate?"

Thinking he heard her speak his name, the gholah said: "M'Lady?"

"If I could only burn this thing out of me!" she cried. "I didn't want to be different."

"Please Alia," he murmured. "Let your sleep."

"I wanted to be able to laugh," she whispered. Tears slid down her cheeks. "But I'm sister to an emperor who's worshipped as a god. People fear me. I never wanted to be feared."

HE wiped the tears from her face.

"I don't want to be part of history," she whispered. "I just want to be loved... and to love."

"You are loved," he said.

"Ahhh, loyal loyal Duncan."

"Please don't call me that."

"But you are," she said. "And loyalty is a valued commodity. It can be sold... not bought, but sold."

"I don't like your cynicism," he said.

"Damn your logic! It's true!"

"Sleep," he said.

"Do you love me, Duncan?"

"Yes."

"Is that one of those lies," she asked, "one of the lies that are easier to believe than the truth? Why am I afraid to believe you?"

"You fear my differences as you fear your own."

"Be a man, not a *mentat*!" she snarled.

"I am a *mentat* and a man."

"Will you make me your woman, then?"

"I will do what love demands."

"And loyalty?"

"And loyalty."

"That's where you're dangerous," she said.

Her words disturbed him. No sign of the disturbance arose to his face, no muscle trembled—but she knew it. Vision-memory exposed the disturbance. She felt she had missed part of the vision, though, that she should remember something else from the future. There existed another perception which did not go precisely by the senses, a thing which fell into her head from nowhere the way prescience did. It lay in the Time shadows—infinity painful.

Emotion! That was it—emotion! It had appeared in the vision, not directly, but as a product

from which she could infer what lay behind. She had been possessed by emotion—a single constriction made up of fear, grief and love. They lay there in the vision, all collected into a single epidemic body, overpowering and primordial.

"Duncan, don't let me go," she whispered.

"Sleep," he said. "Don't fight it."

"I must... I must. He's the bait in his own trap. He's the servant of power and terror. Violence... deification is a prison enclosing him. He'll lose... everything. It'll tear him apart."

"You speak of Paul?"

"They drive him to destroy himself," she gasped, arching her back. "Too much weight, too much grief. They seduce him away from love." She sank back to the bed. "They're creating a universe where he won't permit himself to live."

"Who is doing this?"

"He is! Ohhh, you're so dense. He's part of the pattern. And it's too late... too late... too late..."

As she spoke, she felt her awareness descend, layer by layer. It came to rest directly behind her navel. Body and mind separated and merged in a storehouse of relic visions—moving, moving... She heard a fetal heartbeat, a child of the future. The melange still possessed her, then, setting her adrift in Time. She knew she had tasted the life of a child not yet conceived. One thing certain about this child—it would suffer the same awakening she had suffered. It

would be aware, thinking entity before birth.

XXI

There exists a limit to the force even the most powerful may apply without destroying themselves. Judging this limit is the true artistry of government. Misuse of power is the fatal sin. The law cannot be a tool of vengeance, never a hostage, nor a fortification against the martyrs it has created. One cannot threaten any individual and escape the consequences.

—Muad'dib on Law
The Stilgar Commentary

CHANI stared out at the morning desert framed in the fault cleft below Sietch Tabr. She wore no stillsuit, and this made her feel unprotected here in the desert. The Sietch grotto's entrance lay hidden in the buttressed cliff above and behind her.

The desert... the desert... She felt that the desert had followed her wherever she had gone. Coming back to the desert was not so much a homecoming as a turning around to see what had always been there.

A painful contraction surged through her abdomen. The birth would be soon. She fought down the pain, wanting this moment alone with her desert.

Dawn stillness gripped the land. Shadows fled among the domes and terraces of the Shield Wall all around. Daylight lunged over the high scarp and plunged her

up to her eyes in a bleak landscape stretching beneath a washed blue sky. The scene matched the feeling of dreadful cynicism which had tormented her since the moment she'd learned of Paul's blindness.

Why are we here? she wondered.

It was not a hajra, a journey of seeking. Paul sought nothing here except, perhaps, a place for her to give birth. He had summoned odd companions for this journey, she thought—Bijaz, the Tleilaxu dwarf; the ghola, Hayt, who might be Duncan Idaho's revenant; Edric, the Guild steersman-ambassador; Gaius Helen Mohiam, the Bene Gesserit Reverend Mother he so obviously hated; Lichna, Otheym's strange daughter, who seemed unable to move beyond the watchful eyes of guards; Stilgar, her uncle of the Naibs, and his favorite wife, Harah...and Irulan...Alia...

The sound of wind through the rocks accompanied her thoughts. The desert day had become yellow on yellow, tan on tan, gray on gray.

Why such a strange mixture of companions?

"We have forgotten," Paul had said in response to her question, "that the word 'company' originally meant traveling companions. We are a company."

"But what value are they?"

"There!" he said, turning his frightful sockets toward her. "We've lost that clear, single-note of living. If it cannot be bottled,

beaten, pointed or hoarded, we give it no value."

Hurt, she'd said: "That's not what I meant."

"Ahhh, dearest one," he'd said, soothing, "we are so money-rich and so life-poor. I am evil, obstinate, stupid..."

"You are not!"

"That, too, is true. But my hands are blue with time. I think... I think I tried to invent life, not realizing it had already been invented."

And he'd touched her abdomen to feel the new life there.

REMEMBERING, she placed both hands over her abdomen and trembled, sorry that she'd asked Paul to bring her here.

The desert wind had stirred up evil odors from the fringe plantings which anchored the dunes at the cliff base. Fremen superstition gripped her—*evil odors, evil times*. She faced into the wind, to see a worm appear outside the plantings. It arose like the prow of a demon ship out of the dunes, threshed sand, smelled the water deadly to its kind and fled beneath a long, burrowing mound.

She hated the water then, inspired by the worm's fear. Water, once the spirit-soul of Arrakis, had become a poison. Water brought pestilence. Only the desert was clean.

Below her, a Fremen work gang appeared. They climbed to the sitch's middle entrance, and she saw that they had muddy feet.

Fremen with muddy feet!

The children of the sitch began singing to the morning above her, their voices piping from the upper entrance. The voices made her feel time fleeing from her like hawks before the wind. She shuddered.

What storms did Paul see with his eyesless vision?

She sensed a vicious madman in him, someone weary of songs and polemics.

The sky, she noted, had become crystal gray, filled with alabaster rays, bizarre designs etched across the heavens by windborne sand. A line of gleaming white in the south caught her attention. Eyes suddenly alerted, she interpreted the sign: "White sky in the south: Shai-hulud's mouth." A storm coming, a big wind. She felt the warning breeze, a crystal blowing of sand against her cheeks. The incense of death came on the wind—odors of water flowing in qanats, sweating sand, flint. The water—that was why Shai-hulud sent his coriolis wind.

Hawks appeared in the cleft where she stood, seeking safety from the wind. They were brown as the rocks and with scarlet in their wings. She felt her spirit go out to them. They had a place to hide; she had none.

"M'Lady, the wind comes!"

She turned and saw the ghola calling to her outside the upper entrance to the sitch. Fremen fears gripped her. Clean death and the body's water claimed for the tribe, these she understood. But

...something brought back from death...

Windblown sand whipped at her and reddened her cheeks. She glanced over her shoulder at the frightful band of dust across the sky. The desert beneath the storm had taken on a tawny, restless appearance as though dune waves beat on a tempest shore the way Paul had once described a sea. She hesitated, caught by a feeling of the desert's transience. Measured against eternity, this was no more than a caldron. Dune surf thundered against cliffs.

The storm out there had become a universal thing for her—all the animals hiding from it... nothing left of the desert but its own private sounds—blown sand scraping along rock, a wind surge whistling, the gallop of a boulder tumbled suddenly from its hill—then, somewhere out of sight, a capsize worm thumping its idiot way aright and slithering off to its dry depths.

It was only a moment as her life measured time, but in that moment she felt this planet being swept away—cosmic dust, part of other waves.

WE must hurry," the ghola said from right beside her. She sensed fear in him then, concern for her safety.

"It'll shred the flesh from your bones," he said, as though he needed to explain such a storm to her.

Her fear of him dispelled by

his obvious concern, Chani allowed the ghola to help her up the rock stairway to the sitch. They entered the twisting baffle which protected the entrance. Attendants opened the moisture seals and closed them behind.

Sitch odors assailed her nostrils. The place was a ferment of nasal memories—the warren closeness of bodies, rank esters of the reclamation stills, familiar food aromas, the flinty burning of machines at work...and through it all, the omnipresent spice—me lange everywhere.

She took a deep breath. "Home."

The ghola took his hand from her arm and stood aside, a patient figure now, almost as though turned off when not in use. Yet...he watched.

Chani hesitated in the entrance chamber, puzzled by something she could not name. This was truly her home. As a child, she'd hunted scorpions here by glowglobe light. Something was changed, though...

"Shouldn't you be going to your quarters, m'Lady?" the ghola asked.

As though ignited by his words, a rippling bitter constriction seized her abdomen. She fought against revelling it.

"M'Lady?" the ghola said.

"Why is Paul afraid for me to bear our child?" she asked.

"It is a natural thing to fear for your safety," the ghola said.

She put a hand to her cheek where the sand had reddened it.

"And he doesn't fear for the child?"

"M'Lady...he cannot think of the child without remembering that your firstborn was slain by the Sardaukar."

She studied the ghola—flat face, unreadable mechanical eyes. Was he truly Duncan Idaho, this creature? Was he friend to anyone? Had he spoken truthfully now?

"You should be with the medics," the ghola said.

Again, she heard the fear for her safety in his voice. She felt abruptly that her mind lay undefended, ready to be invaded by shocking perceptions.

"Hayt, I'm afraid," she whispered. "Where is my Usul?"

"Affairs of State detain him," the ghola said.

SHE nodded, thinking of the government apparatus which had accompanied them in a great flight of ornithopters. Abruptly, she realized what puzzled her about the sitch—outworld odors. The clerks and aides had brought their own perfumes into this environment, aromatic of diet and clothing, of exotic toiletries. They were an undercurrent of odors here.

Chani shook herself, concealing an urge to bitter laughter. Even the smells changed in Muad'dib's presence!

"There were pressing matters which he could not defer," the ghola said, misreading her hesitation.

"Yes...yes, I understand. I came with that swarm, too."

Recalling the flight from Arrakeen, she admitted to herself now that she had not expected to survive it. Paul had insisted on piloting his own 'thopter. Eyeless, he had guided the machine here. After that experience, she knew nothing he did could surprise her.

Another pain fanned out through her abdomen.

The ghola saw her indrawn breath and the tightening of her cheeks. He said: "Is it your time?"

"I...yes, it is."

"You must not delay," he said. He grasped her arm and hurried her down the hall.

She sensed panic in him. She said: "No need to rush."

He seemed not to hear. "The Zensunni approach to birth," he said, urging her along faster, "is to wait without purpose in the state of highest tension. Do not compete with what is happening. To compete is to prepare for failure. Do not be trapped by the need to achieve anything. This way, you achieve everything."

While he spoke, they reached the entrance to her quarters. He thrust her through the hangings and cried out: "Harah! Harah! It is Chani's time. Summon the medics!"

His call brought attendants running. There was a great bustling of people in which Chani felt herself an isolated island of calm...until the next pain came.

HAYT, dismissed to the outer passage, took time to wonder

at his own actions. He felt fixated at some point of time where all truths were only temporary. Panic lay beneath his actions, he realized. Panic centered not on the possibility that Chani might die, but that Paul should come to him afterward...filled with grief...his loved one...gone...gone...

Something cannot emerge from nothing, the ghola told himself. From what does this panic emerge?

He felt that his mental faculties had been dulled and let out a long, shuddering breath. A psychic shadow passed over him. In the emotional darkness of it, he felt himself waiting for some absolute sound—the snap of a branch in a jungle.

A sigh shook him. Danger had passed without striking.

Slowly, marshaling his powers, shedding bits of inhibition, he sank into mental awareness. He forced it—not the best way—but somehow necessary. Ghost shadows moved within him in place of people. He was a transshipping station for every datum he had ever encountered. His being was inhabited by creatures of possibility. They passed in revue to be compared, judged.

Perspiration broke out on his forehead.

Thoughts with fuzzy edges feathered away into darkness—unknown. Infinite systems! A mentat could not function without realizing he worked in infinite systems. Fixed knowledge could not surround the infinite. *Everywhere* could not be brought into finite perspective. Instead, he must become the infinite

—momentarily.

In one gestalten spasm, he had it, seeing Bijaz seated before him blazing from some inner fire.

Bijaz!

The dwarf had done something to him!

Hayt felt himself teetering on the lip of a deadly pit. He projected the mentat computation line forward, seeing what could develop out of his own actions.

"A compulsion!" he gasped. "I've been rigged with a compulsion!"

A blue-robed courier, passing as Hayt spoke, hesitated. "Did you say something, sirra?"

Not looking at him, the ghola nodded. "I said everything."

XXII

There was a man so wise,

He jumped into

A sandy place

And burnt out both his eyes!

And when he knew his

eyes were gone,

He offered no complaint.

He summoned up a vision

And made himself a saint.

—Children's Verse
from History of Muad'dib

PAUL stood in darkness outside the *sietch*. Oracular vision told him it was night, that moonlight silhouetted the shrine atop Chin Rock high on his left. This was a memory-saturated place, his first *sietch*, where he and Chani...

I must not think of Chani, he told himself.

The thinning cup of his vision told him of changes all around—a cluster of palms far down to the right, the black-silver line of a qanat carrying water through dunes piled up by that morr ig's storm.

Water flowing in the desert! He recalled another kind of water flowing in a river of his birthworld, Caladan. He hadn't realized then the treasure of such a flow, even the murky slithering in a qanat across a desert basin. Treasure.

With a delicate cough, an aide came up from behind.

Paul held out his hands for a magnaboard with a single sheet of metallic paper on it. He moved as sluggishly as the qanat's water. The vision flowed, but he found himself increasingly reluctant to move with it.

"Pardon, Sire," the aide said. "The Semboule Treaty—your signature?"

"I can read it!" Paul snapped. He scrawled *Atreides Imper.* in the proper place and returned the board, thrusting it directly into the aide's outstretched hand, aware of the fear this inspired.

The man fled.

Paul turned away. *Ugly, barren land!* He imagined it sun-soaked and monstrous with heat, a place of sandslides and the drowned darkness of dust pools, blowdevils unreeling tiny dunes across the rocks, their narrow bellies full of ochre crystals. But it was a rich land, too—big, exploding out of narrow places with vistas of storm-trodden emptiness, rampart cliffs and tumble-down ridges.

All it required was water... and love.

Life changed those irascible wastes into shapes of grace and movement, he thought. That was the message of the desert. Contrast stunned him with realization. He wanted to turn to the aides massed in the *sietch* entrance, to shout at them: If you need something to worship, then worship life—all life, every last crawling bit of it! We're all in this beauty together!

They wouldn't understand. In the desert, they were endlessly desert. Growing things performed no green ballet for them.

He clenched his fists at his sides, trying to halt the vision. He wanted to flee from his own mind. It was a beast come to devour him! Awareness lay in him, sodden, heavy with all the living it had sponged up, saturated with too many experiences.

DESPERATELY, Paul squeezed his thoughts outward.

Stars!

Awareness turned over at thought of all those stars above him—infinite volume. A man must be half mad to imagine he could rule even a tear drop of that volume. He couldn't begin to imagine the number of subjects his Imperium claimed.

Subjects? Worshipers... and enemies more likely. Did any among them see beyond rigid beliefs? Where was one man who'd escaped the narrow destiny of his prejudices? Not even an Emperor

escaped. He'd lived a take-everything life, tried to create a universe in his own image. But the exultant universe was breaking across him at last with its silent waves.

I spit on Dune! he thought.
I give it my moisture!

This myth he'd made out of intricate movements and imagination, out of moonlight and love, out of prayers older than Adam, and gray cliffs and crimson shadows, laments and rivers of martyrs—what had it come to at last? When the waves receded, the shores of Time would spread out there clean, empty, shining with infinite grains of memory and little else. Was this the golden genesis of man?

Sand scuffed against rocks told him that the ghola had joined him.

"You've been avoiding me today, Duncan," Paul said.

"It's dangerous for you to call me that," the ghola said.

"I know."

"I... came to warn you, m'Lord."

"I know."

The story of the compulsion Bijaz had put on him poured from the ghola then.

"Do you know the nature of the compulsion?" Paul asked.

"Violence."

Paul felt himself arriving at a place which had claimed him from the beginning. Hestood suspended. The Jihad had seized him, fixed him onto a glidepath from which the terrible gravity of the Future would never release him.

"There'll be no violence from Duncan," Paul whispered.

"But, Sire..."

"Tell me what you see around us," Paul said.

"M'Lord?"

"The desert — how is it tonight?"

"Don't you see it?"

"I have no eyes, Duncan."

"But..."

"I've only my vision," Paul said, "and wish I didn't have it. I'm dying of prescience. Did you know that, Duncan?"

"Perhaps... what you fear won't happen," the gholah said.

"What? Deny my own oracle? How can I when I've seen it fulfilled thousands of times? People call it a power, a gift. It's an affliction! It won't let me leave my life where I found it!"

"M'Lord," the gholah muttered, "I... it isn't... young master, you don't... I..." He fell silent.

Paul sensed the gholah's confusion. He said: "What'd you call me, Duncan?"

"What? What? I... for a moment, I..."

"You called me 'young master'."

"I did, yes."

"That's what Duncan always called me." Paul reached out and touched the gholah's face. "Was that part of your Tleilaxu training?"

"No."

Paul lowered his hand. "What, then?"

"It came from... me."

"Do you serve two masters?"

"Perhaps."

"Free yourself from the gholah, Duncan."

"How?"

"You're human. Do a human thing."

"I'm a gholah!"

"But your flesh is human. Duncan's in there."

"Something's in there."

"I care not how you do it," Paul said, "but you'll do it."

"You've foreknowledge?"

"Foreknowledge be damned!" Paul turned away. His vision hurtled forward now, with gaps in it, but it wasn't a thing to be stopped.

"M'Lord, if you've..."

"Quiet!" Paul held up a hand.

"Did you hear that?"

"Hear what, m'Lord?"

PAUL shook his head. Duncan hadn't heard it. Had he only imagined the sound? It'd been his tribal name called from the desert — far away and low: "Usul... Uuuusssuuuulllll..."

"What is it, m'Lord?"

Paul shook his head. He felt watched. Something out there in the night shadows knew he was here. Something? No — someone.

"It was mostly sweet," he whispered, "and you were the sweetest of all."

"What'd you say, m'Lord?"

"It's the future," Paul said.

That amorphous human universe out there had undergone a spurt of motion, dancing to the tune of his vision. It had struck a powerful note then. The ghost-echoes might endure.

"I don't understand, m'Lord," the gholah said.

"A Fremmen dies when he's too long from the desert," Paul said. "They call it the 'water sickness.' Isn't that odd?"

"That's very odd."

Paul strained at memories, trying to recall the sound of Chani breathing beside him in the night. *Where is there comfort?* he wondered. All he could remember was Chani at breakfast the day they'd left for the desert. She'd been restless, irritable.

"Why do you wear that old jacket?" she'd demanded, eyeing the black uniform coat with its red hawk crest beneath his Fremmen robes. "You're an Emperor!"

"Even an Emperor has his favorite clothing," he'd said.

For no reason he could explain, this had brought real tears to Chani's eyes — the second time in her life when Fremmen inhibitions had been shattered.

Now, in the darkness, Paul rubbed his own cheeks and felt moisture there. *Who gives moisture to the dead?* he wondered. It was his own face, yet not his. The wind chilled the wet skin. A frail dream formed — and broke. What was this swelling in his breast? Was it something he'd eaten? How bitter and plaintive was this other self, giving moisture to the dead. The wind bristled with sand. The skin, dry now, was his own. But whose was the quivering which remained?

They heard the wailing then, far away in the sietch depths. It

grew louder... louder...

The gholah whirled at a sudden glare of light — someone flinging wide the entrance seals. In the light, he saw a man with a raffish grin — no! Not a grin, but a grimace of grief! It was a Fedaykin lieutenant named Tandis. Behind him came a press of many people, all fallen silent now that they saw Muad'dib.

"Chani..." Tandis said.

"Is dead," Paul whispered. "I heard her call."

HE turned toward the sietch. He knew this place. It was a place where he could not hide. His onrushing vision illuminated the entire Fremmen mob. He saw Tandis, felt the Fedaykin's grief, the fear and anger.

"She is gone," Paul said.

The gholah heard the words out of a blazing corona. They burned his chest, his backbone, the sockets of his metal eyes. He felt his right hand move toward the knife at his belt. His own thinking became strange, disjointed. He was a puppet held fast by strings reaching down from that awful corona. He moved to another's commands, to another's desires. The strings jerked his arms, his legs, his jaw. Sounds came squeezing out of his mouth, a terrifying repetitive noise — "Hrrak! Hrrak! Hrrak!"

The knife came up to strike. In that instant, he grabbed his own voice, shaped rasping words: "Run! Young master, run!"

"We will not run," Paul said.

"We'll move with dignity. We'll

do what must be done."

The ghol's muscles locked. He shuddered—swayed.

"...what must be done!" The words rolled in his mind like a great fish surfacing. "...what must be done!" Ahhh, that had sounded like the old Duke, Paul's grandfather. The young master had some of the old man in him. "...what must be done!"

The words began to unfold in the ghol's consciousness. A sensation of living two lives simultaneously spread out through his awareness: Hayt/Idaho/Hayt/Idaho... He became a motionless chain of relative existence, singular, alone. Old memories flooded his mind. He marked them, adjusted them to new understandings, made a beginning at the integration of a new awareness. A new *persona* achieved a temporary form of internal tyranny. The masculating synthesis remained charged with potential disorder, but events pressed him to the temporary adjustment. The young master needed him.

It was done then. He knew himself as Duncan Idaho, remembering everything of Hayt as though it had been stored secretly in him and ignited by a flaming catalyst. The corona dissolved. He shed the Tleilaxu compulsions.

"Stay close to me, Duncan," Paul said. "I'll need to depend on you for many things." And, as Idaho continued to stand entranced: "Duncan!"

"Yes, I am Duncan."

"Of course you are! This was the moment when you came back. We'll go inside now."

IDAHO fell into step beside Paul. It was like the old times, yet not like them. Now that he stood free of the Tleilaxu, he could appreciate what they had given him. Zensunni training permitted him to overcome the shock of events. The mental accomplishment formed a counterbalance. He put off all fear, standing above the source. His entire consciousness looked outward from a position of infinite wonder. He had been dead; he was alive.

"Sire," the Fedaykin Tandis said as they approached him, "the woman, Lichna, says she must see you. I told her to wait."

"Thank you," Paul said. "The birth..."

"I spoke to the medics," Tandis said, falling into step. "They said you have two children, both of them alive and sound."

"Two?" Paul stumbled, catching himself on Idaho's arm.

"A boy and a girl," Tandis said. "I saw them. They're good Fremmen babies."

"How...how did she die?" Paul whispered.

"M'Lord?" Tandis bent close.

"Chani?" Paul said.

"It was the birth, m'Lord,"

Tandis replied. "They said her body was drained by the speed of it. I don't understand, but that is what they said."

"Take me to her," Paul whispered.

(TO BE CONCLUDED)

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